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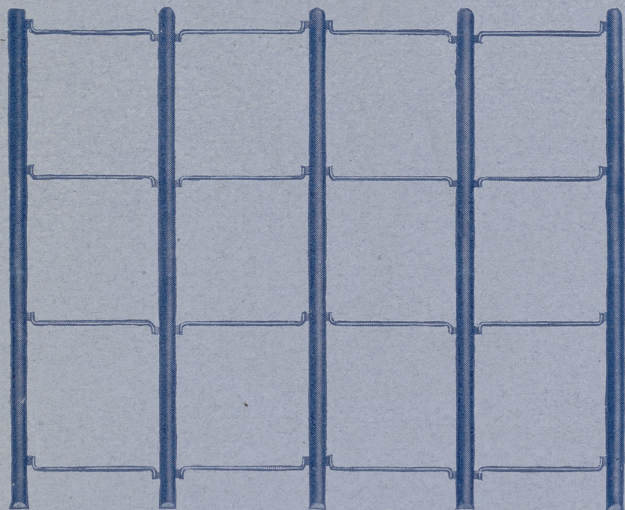
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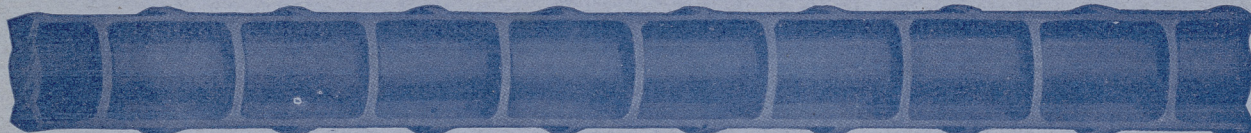


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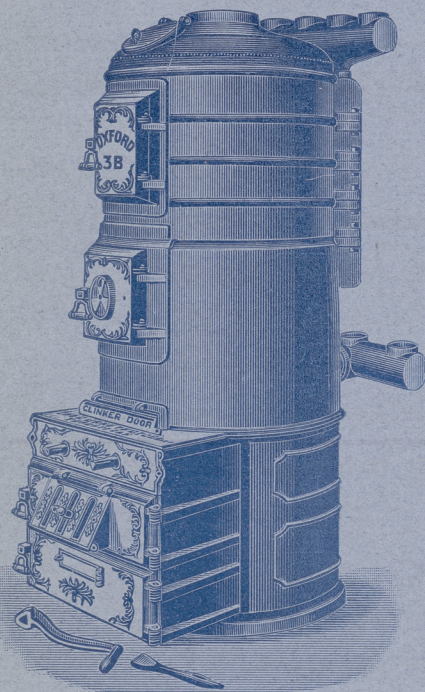
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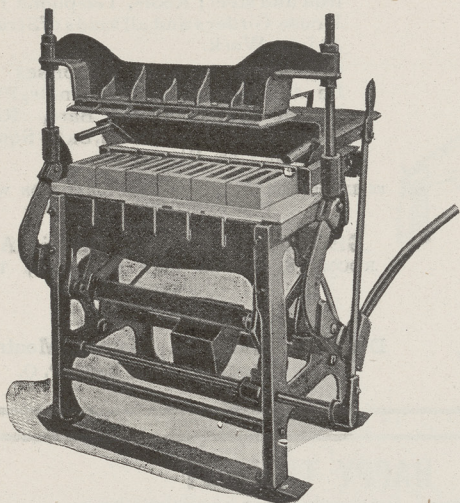
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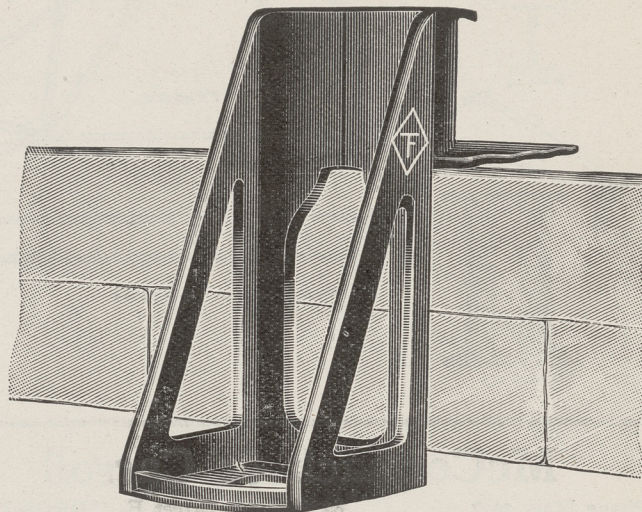
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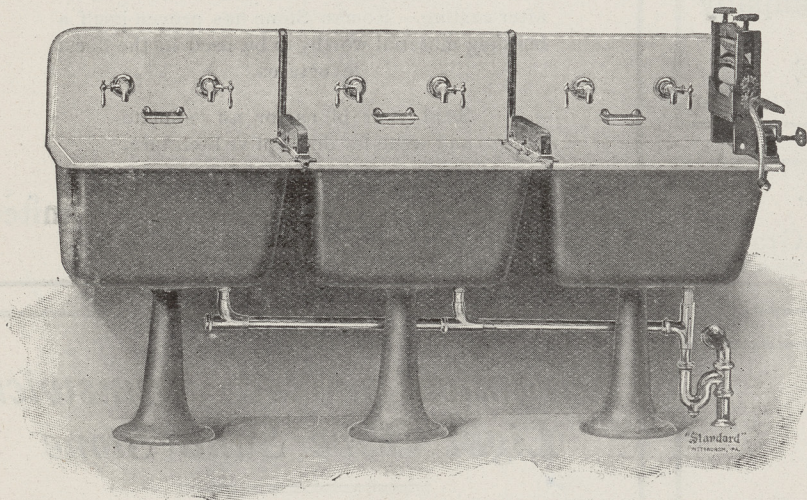
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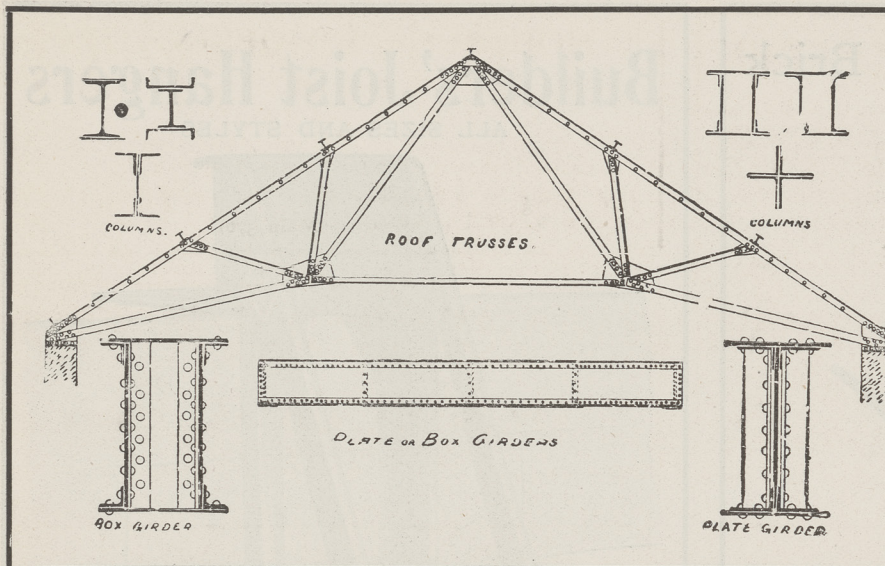


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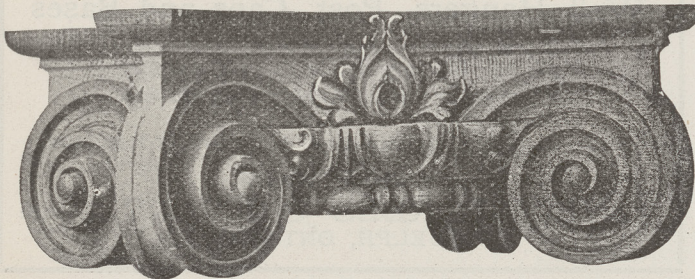
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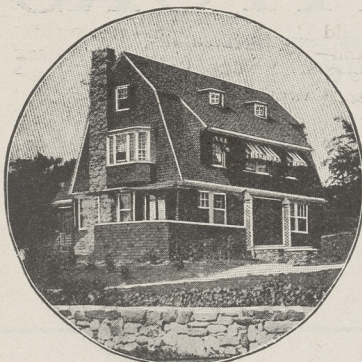
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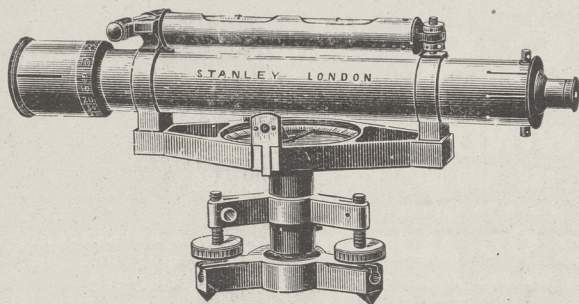
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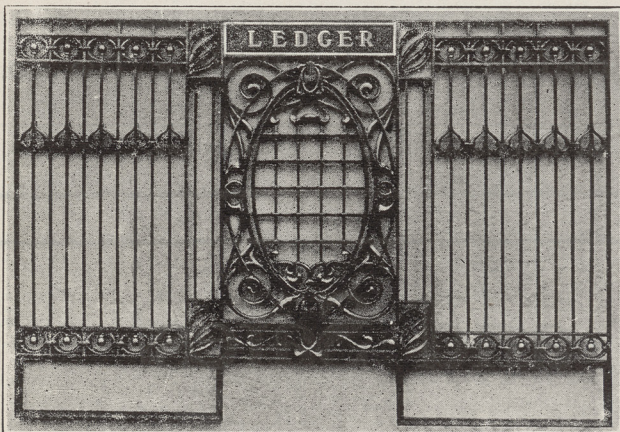
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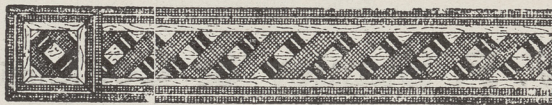
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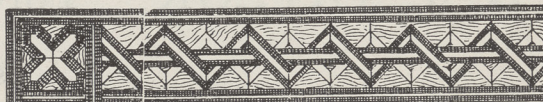


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Toronto

APRIL, 1908

Montreal

THE withdrawal of the bill introduced in the Ontario Legislature by the Ontario Association of Architects marks another step in the development of architectural affairs, but does not unfortunately seem to bring matters any nearer to a solution. The bill asked for an amendment to the Architect's act whereby the Ontario Association of Architects would be given exclusive right to the use of the word "Architect." It also asked for power to negotiate with the University to do the examining of the Association's students. On both points the bill met with strenuous opposition on the part of a number of architects. They opposed it, first, because they declared that it was asking for ineffectual legislation, inasmuch as the Legislature was only ready to enact laws for the benefit of the public, and for their protection from ineffectual and faulty construction or improper sanitary work and equipment. These two essentials, they claimed, could be obtained by the use of effective building bylaws pertaining to structural and sanitary matters, such as already were in existence in every modern city. Further objection was made, that any standard which the Government might establish, requiring only that a man should be qualified in construction and sanitation, would not make an architect of him, but that such persons should be considered as building inspectors or sanitary and construction engineers. In addition to this they contended that the University only, should have the right to examine, as they only, were prepared to give tuition.

The University objected to the bill also, on the ground that the Government had given to them the charge of higher education in Ontario, and that they did not wish any standard to be set up and controlled by persons who were not giving tuition. They did not wish to enter into any agreement whereby they would be placed in the position of being obliged to examine men who were entitled by law to practice architecture, simply after tak-

ing the examination. What they desired was that persons taking the examination should also take their tuition from the University. They did not wish to become simply an examining body without any supervision over the standard of education to be obtained.

The architects opposing the measure took a somewhat similar stand to the University on this point. They believed that if a standard, such as could be obtained from Legislature, should be enacted, students would obtain their education in a haphazard manner, and on passing the examination, be entitled to have the exclusive use of the word "architect." Having thus obtained permission to practice, many of them would not proceed to take a full University course. As a higher standing of education was a great necessity for the uplifting of the profession they felt themselves obliged to oppose any Legislation which would hinder the University from obtaining students, particularly as the University had already intimated that it was prepared to revise the course in architecture and bring it up to the standard of the courses in the Universities in the United States.

LEGISLATION of a somewhat similar nature to that which has just been withdrawn, is already in force in the States of Illinois, New Jersey and California, where licensing acts have been passed. The objection taken to this, as already stated, is that the Ontario Legislature is prepared to provide a standard only for construction and sanitation, and qualification in these two branches does not make an architect.

The question involves a number of side issues, yet it may be taken for granted that the desire of all architects whether supporters or opponents of the bill, is to have the standard of the profession in Ontario raised. The Legislature has not as yet been able to see its way to pass a licensing act, nor does the University see its way towards making itself an examining body for the association. All architects who have a desire to better the profession should study the question closely. The problems confronting Ontario architects today are as complicated as those of any other country and the time has come when a higher standard is necessary. There does not seem to be much in the way of architects coming together to try and harmonize their differences. The means are at their disposal to turn out men who will be a great credit to the profession. Under the existing arrangements many excellent men have been produced, but a plan should be devised which would lead to the development of a much higher standard of architecture generally. Men are needed today who will devote some of their time to the improvement of the profession, and the only practical means of producing them is by the establishment of a thorough University course. Architects with ambition would seek to avail themselves as quickly as possible of any means of improvement. Today an architect obtains a sound grounding in the essentials of construction and sanitation, and also if he is in a good office, in those of attractive design. Then he takes up the practice of the profession and little further opportunity is given for the development of his tastes, beyond what he may come across in his work. With the incentive of a good University course before him he would in a good many cases find a way to make use of it. The differences of opinion between Ontario architects on this subject are surely not so great that they cannot be overcome or at least lessened. It would be to their own advantage and even more to the advantage of the general public if they could come to some definite agreement before the next session of the Legislature.

THE Toronto Saturday Night, last week, sounded a timely note of comment upon a pressing matter in Toronto. It is just four years ago since fire wiped out the centre of Toronto's business blocks. During all that time, much of the property burned ras lain beneath the ruins, and has been an eyesore and a sting to the pride of the citizens. How much revenue has been lost to the citizens by the idleness of all this land cannot be estimated. The city has tried, time and time again to have the railways forced into activity and at the outset of the trouble, private citizens fought against the expropriation of their property; but to no avail. The railways always have their way. The rebuilding of the ruined section, unaffected was a boon to builders and architects. The remaining ruins cover the site of possible buildings which would bring prosperity to many architects and activity to the profession.

Conditions to-day are just at the turning point with the architects. If they are called upon to go through a quiet season, many of them will not be able to figure much profit on the season's work. If activity becomes general, they will have an opportunity to overcome the evil effects of the recent dullness. The commencement of operations on Toronto's Union Station, and the liberation of the neighboring property, now unbuilt upon for fear of its being expropriated also, would go far towards improving things.

Early next month a session of the Board of Railway Commissioners will be held in Toronto to consider this question and also the question of building a railway viaduct along Toronto's front. The railway companies had until June, 1st next to complete their Union Station, and if building had been going on during the years while the land has lain idle, the station would probably be near completion today. The railways will ask for an extension of time, and of course they will have to get it. What will they do then? Will they go to sleep again and leave the city for another four years, with a disreputable front? If the commission does its duty it will attach to the extension of time, cast iron conditions to compel the railways to go ahead with the building.

SPRING building prospects are the subject of greatest interest to architects just now. Conditions are widely variant in different parts of the country. In Ontario and the older parts of Canada generally, the indications are for a moderately lively summer, but with little promise of any unusual activity. Most of the architects are getting along pretty well, with just enough work to keep their staffs busy. One does not hear of any of the staffs being enlarged. A few of the largest firms are as usual crowded with work. It is noticeable however, that most of the large work now on hand was ordered some time ago. No very large orders are making their appearance just now. The financial depression of the past winter has effected the profession generally, throughout older Canada, and although no disastrous results are looked for conditions will not be so pleasant as they were last summer. Those who were able to make hay while the sun shone last year will have little to complain of, if they find themselves able to take things a little easier this year. It is not likely, however, that matters will remain as quiet as they are for a very long period. Before the summer is well advanced the turn of the tide is expected, and if the present indications of renewed activity materialize, it is probable that building activity will be resumed within a short time.

In the newer parts of Canada, the west in particular, matters are in a different condition altogether. Reports show that although the depression of the winter had some effect, it does not seem to have lessened the desire of the people to put up more buildings. The encouraging crop reports recently received by the Canadian Pacific Railway will go a long way to establish the confidence which has already been developed. It is to be expected that a heavy building season will result in the west. High rates for money are a drawback to some extent, but the great influx of American settlers is certain to make things lively in the building trade. The architects cannot fail to be affected by this. American settlers all bring their effects, together with a fair supply of money. They must have homes. Many of them will build their own temporary homes, but their presence and activity will have a moral and a monetary effect which will stimulate everything industrial, coming within the range of their influence.

British Columbia reports of the building trade show that an exceptionally busy season has already commenced. The activity so general all over the west will be a good thing for the east. Its influence will probably be felt as soon as the building season has got well under way.

Historic Hotel Disappears.

One of the most interesting landmarks of New York City, the old Fifth Avenue Hotel, has seen its last days. It was closed early this month, and is to be torn down. The Fifth Avenue Hotel was built in 1859 by Paran Stevens, who owned the Tremont House, Boston, after which the Toronto hotel of the same name was called. The ground at the corner of Fifth avenue and Twenty-third street has become too valuable for so small a hotel. The Fifth Avenue was the scene of many historic incidents. The present King of England, then Prince of Wales, stayed there in 1860, and among other celebrities who visited it were, Dom Pedro, of Brazil, who held court there; Crown Prince Marco, of Siam, and the Emperor of Corea. It was the first hotel to install elevators, and thereby paved the way for the skyscraping hotel which is one of the chief causes of driving it out of business.

Inexpensive Andirons.

If you will examine the andirons in fireplaces of most small apartments, fireplaces where nothing, or at best a gas-log, is to be burned, you will see an example of the cheapest kind of spun brass andiron. It is merely lengths of thin brass piping and lacquered brass balls strung together on invisible iron frames. A slight blow will dent the brass balls, and you have only to pick the things up to realize how flimsy they are.

Many thousands of home builders who have real fireplaces in which they burn wood furnish them with these cheap andirons.

There are plenty of good cast brass andirons made nowadays, but they cost three times as much as a pair of spun brass. You may buy the latter as low as \$2.50 a pair. It is hard to get good modern cast brass andirons for less than \$7 or \$8 a pair, and they come as high as \$100.

It is no longer easy to pick up old cast brass andirons at the junk shops, and the antique shops hold them at high prices. If you keep your eyes open when visiting the country you may still pick up good old andirons at \$3 or \$4 a pair, and they are usually quite as well made as the best of the modern cast brass.—The House Beautiful.



Room Furnished in Circassian Walnut.

A Handsomely Furnished Room.

An attractive addition to the house owned by Mr. E. R. Wood in Queen's Park, Toronto, is shown in an illustration of this issue. Messrs. Sproatt & Rolph are the architects. The whole room is finished in Circassian walnut panels. The mantel at one end is of Indiana buff stone. The floor is oak. The ceiling is in plaster and though finished in oil has been left to give the effect of two shades of plaster, viz., the rim and the moulded. The electric fixtures throughout are of carved wood and oxidized gold.

An United States Idea of the Building Outlook.

Construction News, of Chicago, commenting on the building situation, says: The decreases in most instances are found in a list of cities in which building has been active for a considerable period. It is not only that building has been active, but business had attained a high water mark, and it made new construction necessary in order to keep pace with the growth of these cities, commercially and industrially. They are now enjoying a temporary let-up. No one who is familiar with this group of cities and the enterprise of the people need think that any one of them will undergo a long period of depression. In most of them much improvement is

already visible, and it will not be long until they will be building upon just as great a scale as ever.

With the opening of spring there are indications of a revival. Building which has been in contemplation for some time will proceed, and many who were waiting a period of less activity and lower prices will now go ahead with the construction of buildings which they had under consideration for a long time.

Good Crop Reports are Good News for Architects.

Architects can find just as large a grain of comfort as any others, in the good news of crop prospects from the Canadian West. The Canadian Pacific Railway have issued their first report, based upon despatches from over a hundred of their agents in the West. No more optimistic and generally satisfactory report has ever been compiled by the company. Exceptionally fine weather prevails everywhere. Land is in good shape and seeding is general. Some places, particularly in newer sections report a big increase in acreage.

Good crops mean happy farmers, with plenty of money. Monied farmers mean finer houses for them to live in, and that is where the architect comes in for his share.



Bank of Nova Scotia's New Winnipeg Building.

Winnipeg's Latest Bank Building.

An excellent illustration of the progress made by Winnipeg in recent years is afforded by the importance which it has come to assume to the Canadian banks. In the east of Canada we are accustomed to seeing handsome and elaborate bank buildings. The Bank of Nova Scotia has now decided to erect in Winnipeg a building which will compare well with any of the splendid banking structures that have been put up in the older parts of the country. The location is at the corner of Portage avenue and Garry street. The building is to cost about \$250,000, and the architects are Messrs. Darling & Pearson, of Toronto. The contract is reported to have been let to Thomas Kelly & Sons. The exterior of the building is to be of Renaissance type, constructed of semi-glazed English terra cotta, with a granite base five feet high. There are to be four stories and a dome. As will be seen from the accompanying illustration, the building is to have an entrance at the corner of the two streets. The front is to be elaborate and have richly ornamented detail. The entrance door is to be flanked by two bronze candelabra, and the front steps will be of granite. The vestibule and rotunda will be lined with marble and will have marble floors.

Passing through the vestibule, one will enter the rotunda and then the banking room, which is to have a handsome marble tile floor. This will be a long and very high room, the proportions being thirty-four feet wide and seventy-three long by twenty-eight feet in height. It will contain accommodation for sixteen clerks. At the far end of the banking room will be situated the two vaults, one for the treasury and the other for the books. The banking room will be finished with a dado ten and one-half feet high, of caen stone plaster, and above this will be plain white plaster. The ceiling will be of ornamental plaster beams. A feature of the accommodation for the clerks will be a series of five alcoves at one side of the banking room, with room for two standing desks in each. The manager's room is to be situated between the vestibule and the banking room, and will be fifteen feet by seventeen feet, containing a handsome alcove marked off by two columns, in which there will be located a gas grate. In the rotunda, which one enters from the vestibule, will be an iron and marble winding stairway, leading to the safety deposit vaults in the basement. Beside the stairway will be the elevator, and beyond that a marble stairway leading to the upper stories. The two lower floors will be devoted to banking. On the mezzanine floor are to be three offices, while on the first floor there will be eleven offices and on the second floor twelve offices. In the upper stories the offices will be rented for general business purposes.

In the basement at the foot of the iron stairway there will be a space, twenty-two by twenty-four feet, in front of the safety deposit vault. The vault will be seventeen feet by twenty-six feet, with the usual coupon rooms to one side. Beyond this there will be the boiler room and the fuel room, also locker rooms and lavatories for the clerks, and a big vault twelve feet by fifteen and a half feet for the use of the bank.

The specifications call for steam heating, which will be supplied by one large boiler. Expanded metal lathing is to be used throughout. The floors will be of concrete, fireproof. The whole building is to be of fireproof construction, with fireproof terra cotta partitions and furring. On the ground floor the woodwork is to be of mahogany and the rest of the building is to be furnished throughout in quarter-cut white oak. The roof is to be flat, made of pitch and gravel.

A glance at the accompanying illustration will show that the building will be a decided acquisition to the banking buildings of Winnipeg. The decision of the Bank of Nova Scotia to put up such a splendid building will be greatly appreciated by the business men of Winnipeg, and it will probably go a long way towards persuading other banks to follow suit.

The property upon which the building will stand was purchased for \$2,800 a foot. This was the highest price ever paid for realty in Winnipeg. The old building which now stands on the property was one of the original warehouses in Fort Garry. It was built of hewn oak logs, and at the time the walls of the old fort were destroyed the building was removed to its present location and covered with boards, as it now appears. Hon. Wm. Hespeler was the purchaser who removed it to its present site.

Addition to Bank of Nova Scotia's Toronto Office.

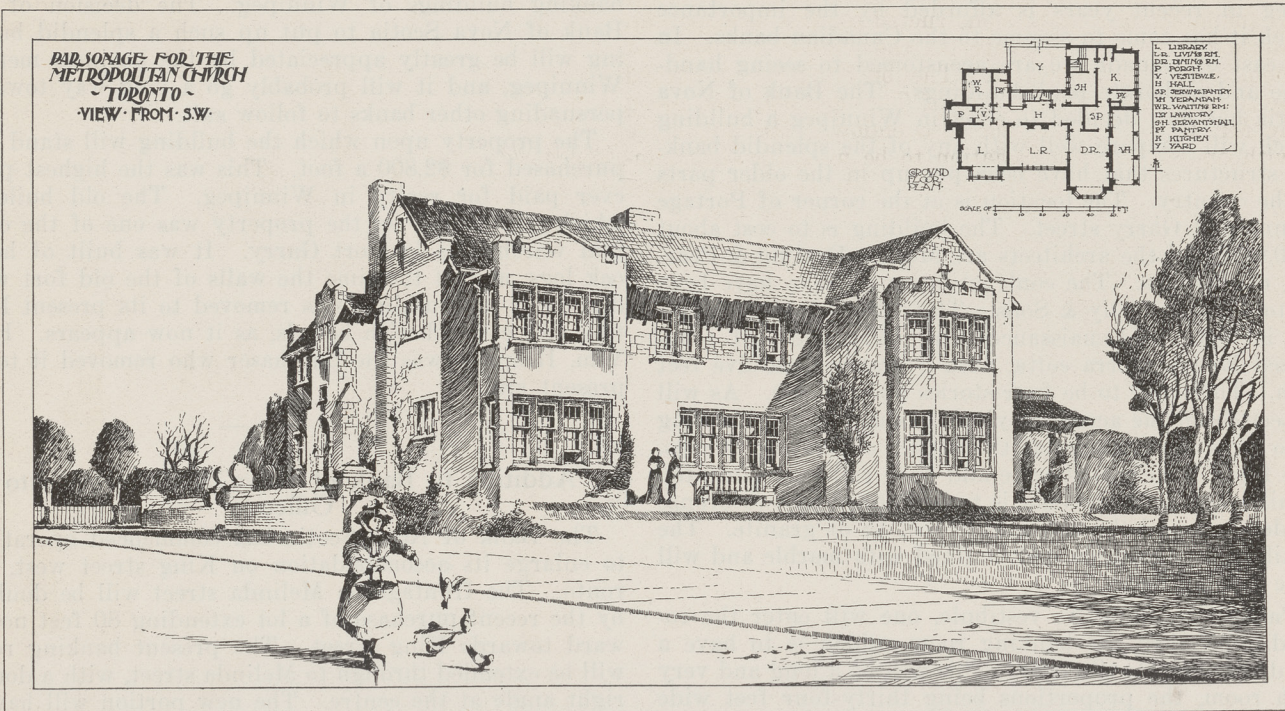
The Bank of Nova Scotia has commenced operations to enlarge its accommodation on King street west, Toronto. The frontage on Melinda street will be doubled by the recent purchase of a lot extending 80 feet northward towards King street. The present banking room will be extended through to Melinda street, with a double right angle at the centre. The new portion will have a basement and five storeys. The exterior will be of stone frame and pressed brick. The cost of the addition will be about \$55,000. On the ground floor there is to be no connection with the adjoining offices, but on the next floor the banking offices will be extended over both the old and the new building. The treatment of the new section of the banking room on the ground floor will be similar to that of the old section. The architects are Messrs. Darling & Pearson, Toronto.

Death of Hugh McCowan, of Winnipeg.

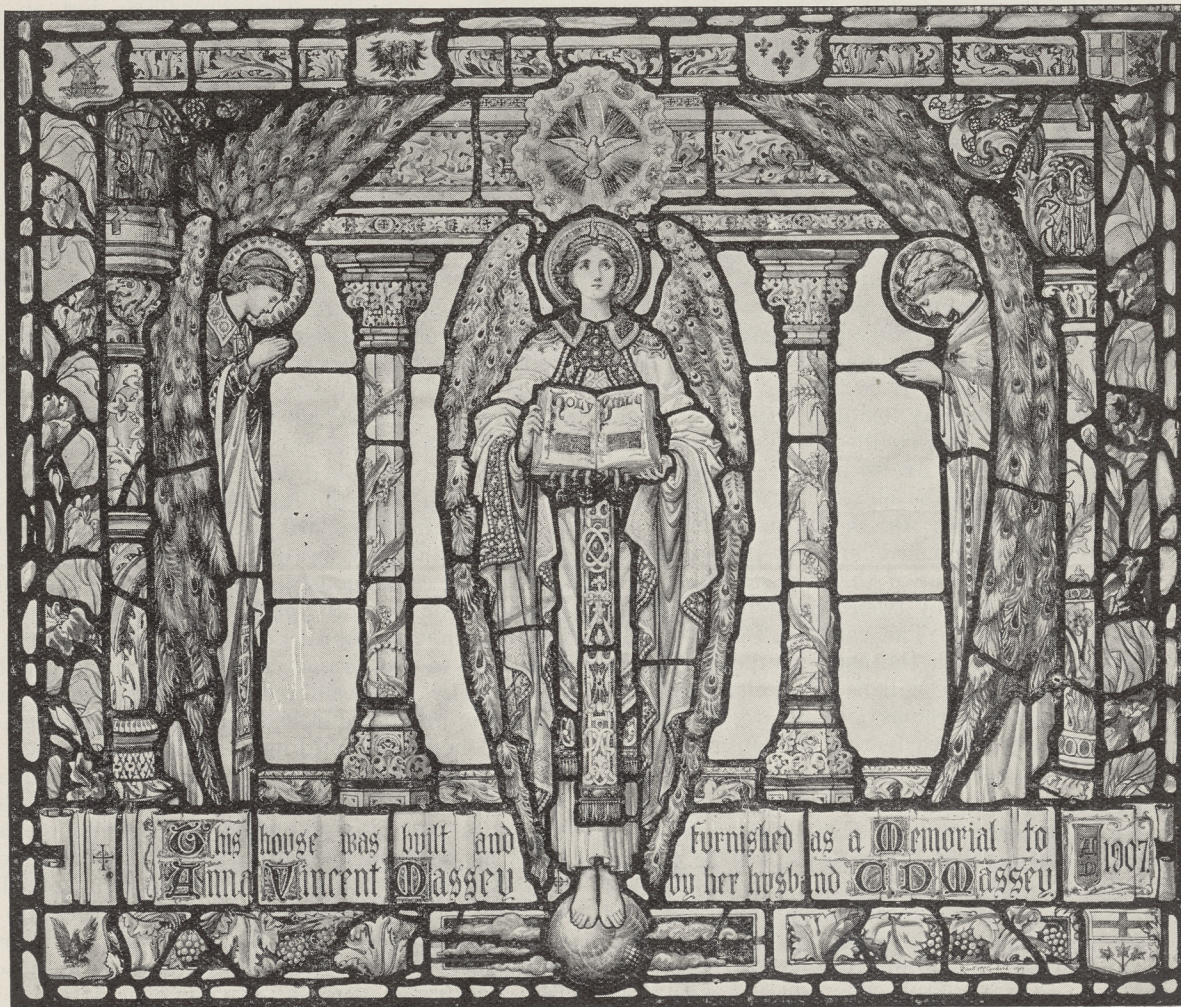
One of the pioneer citizens of Winnipeg, and a leading figure in architectural work, passed away recently in the person of Hugh McCowan, highly respected and well known by nearly all of the old-timers. His death came suddenly and was a great shock to a large circle of friends, who regarded him with the highest esteem. Probably there was no architect in Winnipeg whose name was closer linked with the development and growth of Winnipeg than the late Mr. McCowan. He was born at Wardsville, Ont., 67 years ago and went to Winnipeg about thirty years ago. Since that time he had resided there continuously. He engaged in the contracting business for several years and was highly successful. Later his natural ability drew him into the architectural work and in this branch he encountered unusual success. He was always considered one of the leading architects, and his opinion was looked upon as being extremely valuable. Among the buildings which he supervised were the jubilee wing of the general hospital, the Collegiate Institute, the Henderson block on Princess street, the Stovel block and the Baptist college at Brandon. For many years he pursued his calling alone, but later he formed a partnership with C. H. Walker, now of Hooper & Walker. About four years ago this partnership was dissolved, and since then Mr. McCowan had practically ceased active work. Mr. McCowan was a subscriber to THE ARCHITECT AND BUILDER for over fifteen years, and a frequent visitor at the Winnipeg office.

A UNIQUE TORONTO PARSONAGE

SPROATT & ROLPH, Architects, Toronto.



Metropolitan Church Parsonage, Toronto.



Memorial Window in Metropolitan Church Parsonage.

The Metropolitan Parsonage, Toronto.

A good example of parsonage architecture is afforded by the building recently constructed for the Metropolitan Methodist church, Toronto, at the southeast corner of Bond and Shuter streets. The building was designed by Messrs. Sproatt & Rolph of Toronto, and was given by Mr. C. D. Massey who also endowed the parsonage with an annual appropriation to be used for the maintenance of the establishment, in addition to the minister's salary. The architects in this instance were given one of the most unique opportunities that has ever fallen to the lot of any member of their profession. They were given carte blanche within the limits of the appropriation, to build, decorate and supply absolutely every thing needed for the building of the parsonage, and its equipment as a home. They began at the basement with the laundry, and went right through the house, supplying every necessary furnishing for every room, including carpets, chairs, tables, bedroom furniture and even linen and towels. They chose the pictures for the walls and planned every interior decoration. The building is a memorial to the late Mrs. C. D. Massey.

All the rooms on the main floor have been trimmed or panelled in fumed oak, and the bedrooms in white oak. A feature of the house is that it has been furnished throughout with old mahogany furniture which the architects have picked up from time to time as the opportunity occurred.

The hall has been treated in the shape of a long corridor, with the ceiling vaulted and the stairs leading off from the left. The spandrill of the stairway is treated in the form of an old Gothic screen with Gothic carved heads and architraves. On the first landing a memorial window has been put in, which is considered perhaps one of the best pieces of such work that has been executed in this country. It does great credit to the designer, Mr. R. McCausland. An illustration of the window is published in this issue. The same treatment has been carried out in the upper hall as in the lower. In the library and sitting room on the first floor which have been treated in oak, the design is perhaps rather severe, with the fireplace cut out of white stone and the hearth stone of the same material.

The ground floor plan shows that the design is purely and simply that of a parsonage. This is the reason for the reception room and library being placed as they are. The plan is on an exceptionally large scale, as the minister in this particular instance is called upon to do a great amount of entertaining. The dining room is finish-

Reports from Hamilton give promise of a fairly active building season. A contractor with decided opinions when interviewed a few days ago said: "I think that the people are getting over their hypercritical sensitiveness and are beginning to come out of their shells once more. As a matter of fact, now is the time for a man who has the money, to build a house, either for himself or speculation. People are like sheep, to some extent. If times are good, and everyone builds, the man who thinks about it is encouraged to act. When building falls off the timid one goes to sleep. The way the building permits have been issuing lately is one of the best signs of the month."

"For instance, close to \$50,000 worth of permits have been issued in the last week. This is dwelling work, and it means that the building fraternity of the city will have to get busy very soon. The prospects for the season are certainly encouraging. The western crops promise to be good, and this has a tremendous effect on the minds



Metropolitan Parsonage—Main Entrance.

ed in oak. The walls are treated in old tapestry effect, and the furniture is of good old English design, the whole affording a most harmonious effect.

The electric fixtures have had perhaps more thought and time spent upon them; so as to suit their individual purposes in the design, than is usually the case in the most elaborate houses. The building is of grey Credit Valley stone trimmed with Bedford buff lime stone. The roof is covered with green slate. What little woodwork appears upon the exterior has been treated in colors to match the stone work.

of Canadian people" Other business men say that everything is picking up wonderfully. The building trade has been about the slowest so far, but it is feeling the stimulus that is forcing everything into its normal busy condition.

Hamilton Assessment on Increase.

Assessment Commissioner Macleod of Hamilton has announced that there will be a general increase this year in assessment values. He has been going into the matter carefully since his appointment a year ago, and he has come to the conclusion that the time is opportune for an increase. As compared with other cities, Hamilton's real estate assessment, he says, is far below what it should be. He regards the present depression as being only temporary, and in spite of it says there was no falling off in prices of real estate.

REINFORCED CONCRETE DESIGNING

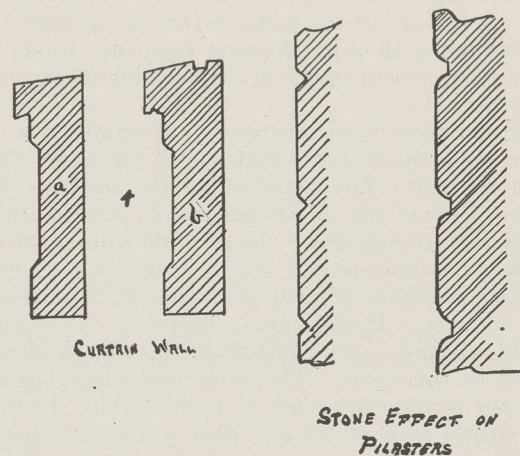
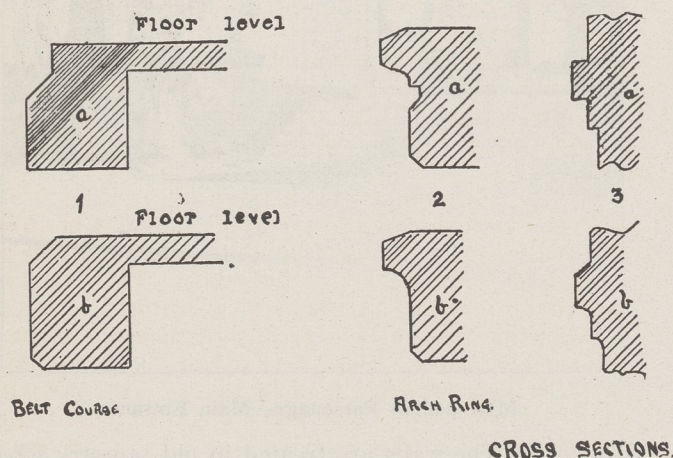
The following article upon "Reinforced Concrete, Design and Construction" is contributed by Mr. R. H. Haas of Bayonne, N. J.

In order to give an idea of the possibilities of reinforced concrete, in a condensed form, the writer will omit reference, to a certain extent, to the theoretical side, and will sum up mainly from the contractor's and owner's point of view, that is—the practical side.

Concrete history runs back into the ages. We are told and shown, that the old Egyptians knew of a sort of cement. The old Romans manufactured a "puzzolane-earth" cement out of volcanic ashes. The Englishman Parker manufactured a cement at the beginning of last century on the Thames river by mixing, burning and grinding clay and lime which he called Roman cement. Only within the last ten years has the cement industry obtained the immense proportions and achievements of to-day. Much credit for the prominence of the concrete industry in the United States is due to Mr. E. L. Ransome, who began years ago to use the discarded cables of the San Francisco street railway as reinforcement,

Simplification should be the architect's key-note. This he can adopt without aesthetic loss, by making a study of concrete and keeping in mind that that which looks easy and beautiful in stone and wood is, generally, expensive and out of place in concrete. Again, features necessary in mill construction can be omitted in reinforced concrete on account of the monolithic nature. Inexperienced architects and engineers will often lay out openings etc. in floors directly across the economic running of steel, thereby necessitating extra headers etc. with all their extra and expensive framing of forms. A great saving is made by designing the building as a skeleton, that is, casting curtain walls independently, after columns and floor slab have set. The accompanying details will give the reader some idea of correct and incorrect—I should say expensive—designs.

In figure 1 the belt (a) will cost fully 60 per cent. more in forms including the saving of concrete than (b). The depth of (a) in fig. 2 between ring and crown is too small; (b) is better. In (a) of fig. 3 we have a detail in stone and in (b) the corresponding design in con-



and later, patented the famous twisted bar and drum mixer.

Canada has boomed reinforced concrete buildings only in the last two years, but the growth of the industry is wonderful. Great difficulties have had to be overcome, among which may be mentioned the crowding of twelve months' work into six. In 1906 the writer made the prediction that the concrete industry would surprise even the optimist, and after closely watching the growth since then, the results, I believe, have proven the correctness of the prediction. The difficulties at present seem to be the obtaining of materials quickly and economically. Contractors, who have enough capital, will have to furnish barges, etc. for the proper handling of their supplies if they wish to make the money that is waiting for them in this industry.

In the matter of design, engineers, architects and contractors should work towards the standardization ideal, if they wish to obtain economical and rapid results. Straight lines and uniform design of beams and girders in simple structures are of more importance than the exact theoretically economical size of the beam, or the computing of the area of reinforcement to the fraction of a thousandth part of an inch. This seems also apparent from the fact that the mills specify a variation of weight of 5 per cent. either way from their standard. Moreover, one single shipment of steel bars will, generally, vary greatly in elastic limits.

crete. In the curtain walls of fig. 4, (b) is the better on account of requiring less labor on forms and less patching after removing the forms.

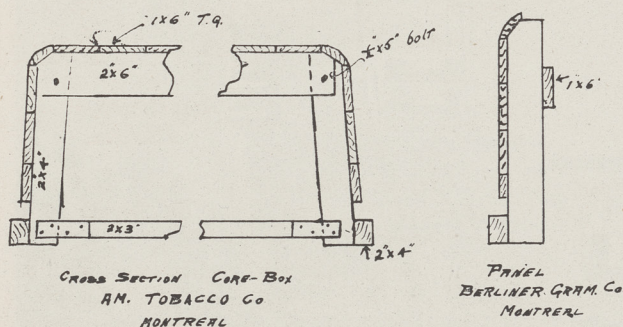
It must be admitted that the architect cannot set up at present as an expert in reinforced concrete; his mind has to be too busy with all the materials that enter into a building. Therefore he can devote only part of his time to the study of reinforced concrete, while the specialist is limited only by his ambition. Still, the architect must, and does, take notice of the almost unlimited possibilities of concrete, which are evidenced by the fact that at the last meeting of the American Institute of Architects, nearly two days out of four were allotted to the discussion of concrete. The following extract from the report of a committee at this meeting, seems to predict great possibilities for reinforced concrete from the architect's point of view: "And now comes the ghost of what might have been, and calls for incarnation, feeling (if a giant can feel) that in reinforced concrete, science is preparing a system which can be vivified with the spirit of Art."

DETAILING CONSTRUCTION FORMS.

Forms are the most expensive item on a concrete building, and at least as much time and thought should be spent on the detailing of them as is spent on the reinforcing members. The contractor should work towards a standard detail of form which can be used over and over

again on one or more buildings, instead of attacking this most important item and cutting salient costs. By working out a standard in place of cutting the number and removing the forms in the minimum time, the contractor will put money in his pocket and most surely never have cause for regret. There are two types of forms, known as "core-box" and "panel" construction. In either case the forms must be so constructed that changes in depth or width of beams can be made without cutting the form to pieces. Furthermore, in the detailing it is best to keep in mind the wrecking more than the erection, as economy in forms depends greatly on how many times a form can be used with the least repairing. Do away with hammer, saw and nails as much as possible in the erection and have recourse to bolts, wire or band iron.

The following details of forms are types as designed and used by the writer in different parts of the continent and they will give the reader and student some idea of feasible and practical forms. The writer cuts out 2 inch lumber as much as possible, except in beam and girder bottoms. In this way money is not only saved in the first cost of lumber, but the forms are more easily handled and hoisted. Experience also teaches that such forms show up much better after an equal amount of hard usage. One inch by six inch T. and G. or bevelled edge pine or spruce makes ideal form lumber. Boards wider than six inch have a tendency to warp. Core-boxes are erected economically and rapidly when beams are nearly uniform in width and the building is of some magnitude. The sides must have a chamber of three-quarter inch in twelve inches. In the panel construction any slight deviation in line can be taken up at the junction of floor and beam panel. Immediately after construction, forms should be greased with some mixture of soft soap and coal oil.



There is only one correct method of wrecking forms, and that is to wreck the columns first; in this way any defect in the column can be discovered and remedied before removing the supports. The core-boxes pull easily by jarring and the panels by springing.

AGGREGATES AND PROPORTIONS.

The concrete aggregates and proportioning are generally determined for the contractor, but he must have some knowledge of the material he is going to handle—cement, broken stone or gravel, sand. Cement should be stored on the job for at least seven days to allow a test for fineness, setting, boiling and tensile strength. The finest ground cement is the best. Uniformity of color is also desired for aesthetic reasons. In 1906, when the writer had continual tests made of Canadian cement which he was using, the head of one of the cement concerns became rather indignant over "the waste of time" by not accepting his mill tests. No engineer or contractor should be satisfied with mill tests, especially when the requirements read that cement must be of a certain

standard. There is too much at stake. Sand should be clean, sharp and graded. According to reports, and the writer's experience, a very small percentage of clay is not detrimental, but a very fine sand is. A convenient test to determine the cleanliness is to throw a handful of the sand into a tumbler of water; if the water remains muddy and cloudy for some time the sand should be rejected.

There has been some controversy as to which is better, stone or gravel concrete. Among the arguments brought forth, it has been said that the surfaces of gravel were "not susceptible of the same affinity to the cement" as broken stone. Yet it is a fact that we can obtain dense concrete more easily with gravel. The reason for this lies in the fact that the angular pieces of broken stone sometimes arch and form a void underneath which no amount of tamping can break. Again, we know that the glossy surfaces found on some broken stone are no more "susceptible of the same affinity to the cement" than gravel. The recent fierce fire at Dayton, Ohio, also proved some of the sterling quality of gravel concrete as a fireproofing aggregate. Machine mixed concrete is to be preferred; in tests with which the writer is familiar, machine mixed concrete showed results as high as 25 per cent. above hand mixed.

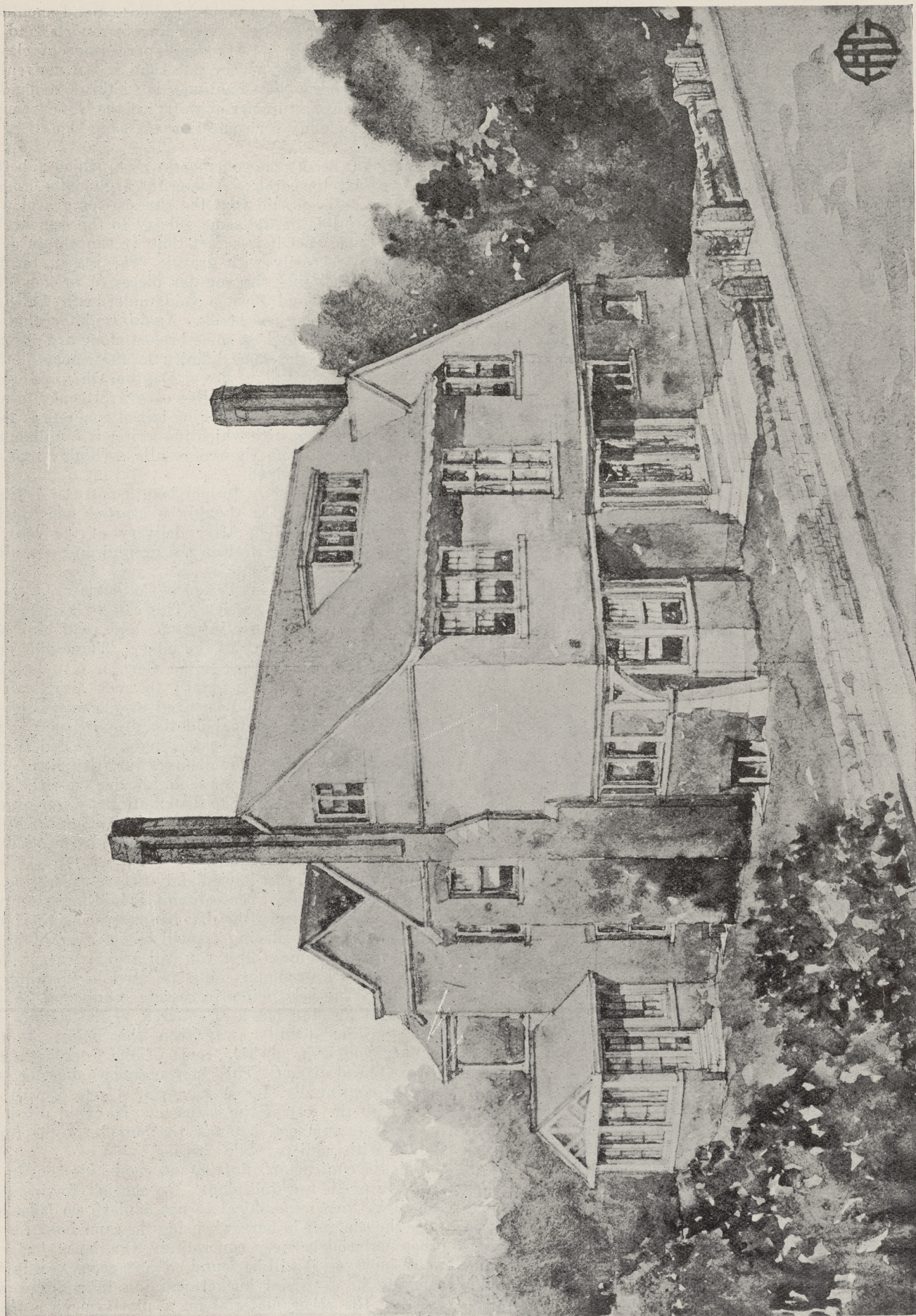
All steel should be of proper length and the different diameters and lengths should be assorted and stacked separately immediately after delivery at the job. If possible assemble the steel on the ground and place as a unit.

MIXING AND PLACING CONCRETE.

Feed the mixer by gravity. This can be done in sinking the mixer or by erecting stone and sand bins high enough above the mouth of the mixer. These bins must be fed by a boom derrick or an elevator. In building construction the first is generally the more practical. A measuring hopper should be fixed at the mouth of the mixer with a capacity to hold the proportioned aggregates for one batch. The water ought to be fed from a barrel through a pipe some distance into the mixer; that part of the pipe in the mixer should be drilled with three-eighth inch holes in order to distribute the water evenly. The concrete is best raised by an automatic hopper of the Ransome type, from which it dumps into a receiving hopper at the desired height.

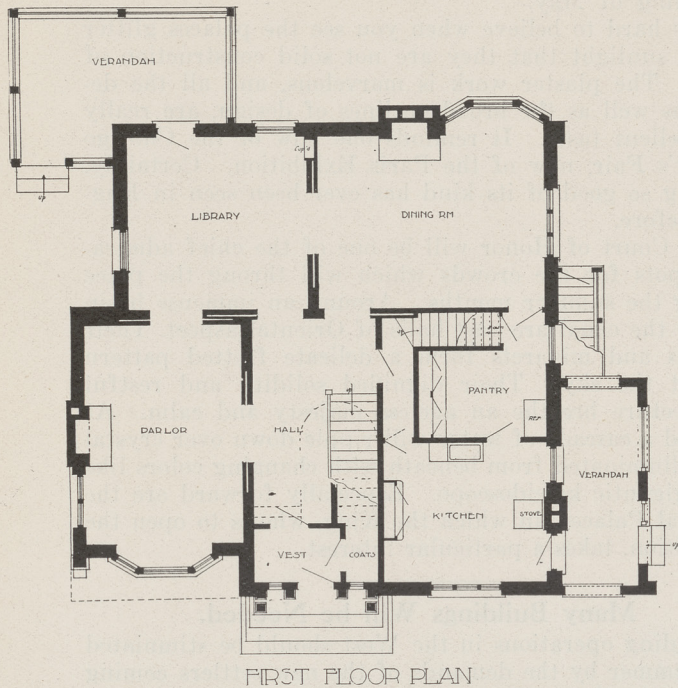
Spraying the forms immediately before concreting insures good surfaces. The columns should be cast up to the soffit of the beams the day before casting the latter and the slab. By placing a small batch of grout in the bottom of the column first you can avoid stone pockets. Long spades or rammers must be used in tamping the concrete. The best policy in casting beams and slabs is to deposit the first batch of concrete at the column and then working steadily away from this point. In this manner you keep pushing some of the finer aggregate always ahead of you. This finer aggregate must be kept moving continually, for the moment it sets, it will not bond with the rest of the concrete. To avoid pin holes on concrete surfaces, hammer the outside of the forms lightly with mallets while casting.

It is the contractor's duty to use good judgment in the selection of his working plant. On one job, for instance, it will be more economical to use a platform hoist and raise the concrete in barrows, using the same hoist for the other material between concreting. On the majority of work, however, it will be found advantageous to raise the concrete in a special bucket running in a frame and hoisting the other material on a platform or a single "square" derrick, swinging on hinges which are fastened



House on Lampport Avenue, Toronto, for Jas. McLenaghan. Wickson & Gregg, Architects.

HOUSE ON LAMPORT AVE ROSEDALE
FOR JAMES McLENAGHEN ESQ



WICKSON & GREGG ARCHTS
59 YONGE ST TORONTO

Handsome Modern English Type of House.

The design of a house in Rosedale, and its two floor plans, shown in this issue, are the work of Messrs. Wickson & Gregg, architects, Toronto. The house is being erected on Lamport avenue on a lot, over a hundred feet wide and extending back some five hundred feet into the ravine to the north. The cost of the building is to be about \$13,000. The exterior, of a modern English style, will be in dark red brick mixed with occasional almost black bricks. The brick points are to be white. The upper half of the building is to be partially of plaster on the brick wall. The library, dining and sitting rooms will all overlook the ravine to the north, and for this reason the kitchen has been placed at the front of the house, which faces to the south. A third floor, of which no plan is shown, will contain a large billiard room, two good bedrooms, a bathroom and a storeroom. The hall and dining room are panelled in white oak and are tiled. The dining room will have a beam ceiling. The building is now very near completion. The exterior view shown is taken from the south, showing the Lamport avenue face of the house. The house is being built for Mr. James McLennan.

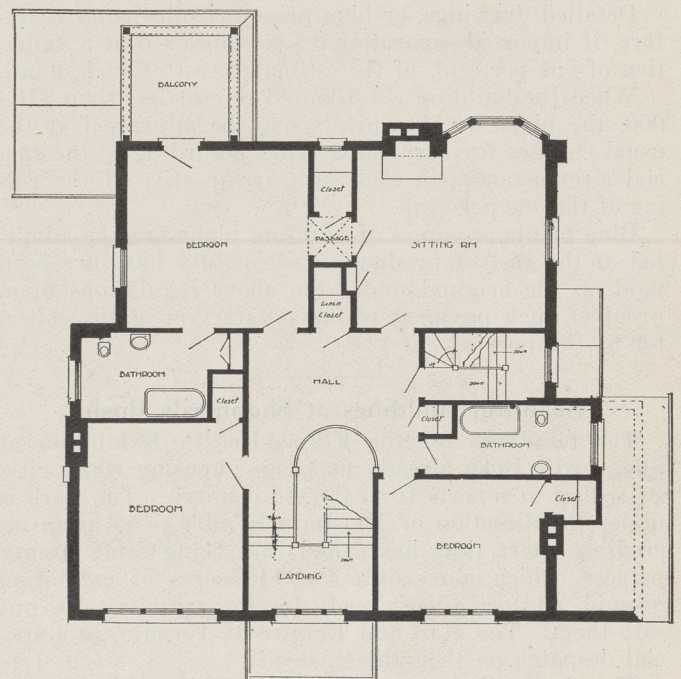
The bill to amend the Architects' Act, which was introduced in the Ontario Legislature, has been withdrawn. Hon. Mr. Foy recommended this course when the bill was before the Legal Committee. He said that the bill had better come up next session. He understood that the University authorities were averse to it, and thought the contending parties could come together and have a new bill next session. The bill provided for Provincial examinations before architects could advertise as such.

Architecture at Montreal Art Exhibit.

The Architectural Section at the 24th annual spring Art Exhibition at Montreal was by no means as strong as the sister arts and was crowded in among the black and white work. Among the notable works shown were Messrs. Ed. and W. S. Maxwell's winning designs for the Regina and Ottawa Legislative Buildings. Professor Nobbs showed his MacDonald Engineering Building and a proposed front for the old Medical Building at McGill University. Messrs. Saxe & Archibald were represented by two residences and an interior of Emmanuel Church. Messrs. Hutcheson & Wood showed a proposed church at Westmount. Messrs. Finley & Spence exhibited their competitive design for the Government Buildings at Ottawa, and an office building. Messrs. Ross & MacFarlane were well represented by the new Bank of Toronto, which was unfortunately hung, and several factory buildings. Messrs. Peden & MacLaren exhibited several banks and cottages, and Robert Finley showed a number of residences. Kenneth G. Rea showed a residence. There were also a large number of other drawings of domestic work, but chiefly of less than passing interest. It looks as if some attention might be given to the hanging of good architectural photographs instead of the large amount of mediocre perspectives, it being generally understood to-day that exhibitions of this nature should represent actual architecture more than mere draughtsmanship, especially where the latter so often falls short of the result attained.

A new Orange hall for West Toronto will be erected on a lot 50 feet by 132 feet, which has been purchased for the purpose on the corner of College street and Euclid avenue. The Western District Orange Hall Company has been incorporated to finance the scheme, with a share capital of \$40,000.

HOUSE ON LAMPORT AVE ROSEDALE
FOR JAMES McLENAGHEN ESQ



WICKSON & GREGG ARCHTS
59 YONGE ST TORONTO

Why Not Patronize Canadian Architects?

From a patriotic reader signing himself Canuck, the following letter has been received:

"The following items appear in the issue of the N. Y. Engineering News of March 19th:

Warren & Wetmore, 3 East 33rd street (New York), have completed plans for a 3-story railroad station to be built at Winnipeg, Man., for the Canadian Northern and the Grand Trunk Railways. The building will be constructed of brick and stone. Bids will be received about April 1.

Vancouver, B.C.—We are officially advised that the contract for the construction of the sub-structure and temporary bridge over False Creek was awarded on March 9 by the city to Waddell & Harrison, Kansas City, Mo. N. A. Clement is City Engineer.

"I would like to know if we have any architects or engineers in Canada capable of doing this work? Also whether customs duties were collected on the plans? It so, how much? You might give us the tariff regulations on this.

The tariff regulations referring to this matter are as follows:

Competitive plans brought in for inspection may be entered as for warehouse and inspected under customs supervision, subject to payment of duty within sixty days unless then rejected and ex-warehoused for exportation.

Regarding building plans in general the regulations are as follows:

Building plans, drawings and blue prints, 25 per cent. Tariff Item 180.

Specifications free, as manuscript, when written or typewritten. Item 177.

Special plans of building or blue prints, as substitutes therefore, are to be valued for duty at the charge usually made by the architect for the drawings, without the specifications. This charge may be fixed for duty purposes at one per cent of the estimated cost of the building to be erected.

Detailed drawings, or blue prints as substitutes therefore, if imported separately, to be appraised at a valuation of one per cent. of the estimated cost of such detail.

When the building is estimated to cost less than \$10,000, the plans or blue prints may be appraised at the usual charges for furnishing same, according to the special circumstances in each case, irrespective of the ruling of the one per cent.

Blue prints or copies of building plans may be admitted at the cost of production when duty has once been paid on the original under the above regulations upon proof of such payment to the satisfaction of the collector at the port of entry.

Beautiful Buildings at Shepherd's Bush.

The buildings for the Franco-British Exhibition at Shepherd's Bush already make an imposing white city, according to reports from the old country. The work is under the direction of Mr. Imre Kiralfy, who in an incredibly short time has called into being some twenty palaces, which now cover the 140 acres of exhibition ground, and are almost ready for the exhibits to be put into them. The Mail and Empire of Toronto, in a special despatch on the subject, says:

The first sod was cut less than fifteen months ago. Then the place was a desert, a gloomy stretch of mud and rank grass. Now it is a stately town, with wide

roads and pleasant gardens and a broad canal meandering through it, with fine buildings at every turn, each vista revealing fresh beauties, and every promise of being ready for the public to gaze upon its wonders at the beginning of May.

It is hard to believe when you see the palaces glitter in the sunlight that they are not solid construction of stone. The plaster work is marvelous, and all the details, as well as the broad outlines of design, are really in excellent taste. It reminds one now of the Chicago World's Fair, now of the Paris Exhibition. Certainly, nothing so good of its kind has ever been seen in England before.

The Court of Honor will be one of the chief admiration spots for the crowds which will throng the place during the summer months. Around an immense basin fed by the canal are vast halls of Oriental aspect. Their cupolas and minarets form a delicate fretted pattern against the sky. Their dignified solidity and restful architecture breathe an ageless majesty and calm. At one end a cascade of water will ripple down over crystal steps illuminated from beneath with changing colors like some gigantic kaleidoscope. Especially forward are the Colonial Palaces, in which the King, who is to open the Exhibition, takes a particular interest.

Many Buildings Will be Needed.

Building operations in the West should be stimulated this summer by the demands of the new settlers coming in from the United States. An increase of sixty-one per cent. in the immigration of Americans to Canada took place during the months of January and February of this year, as compared with 1907. The success which has attended the efforts of other farmers from the Republic who have located in the Dominion within the past few years has been responsible for the larger influx, and has been sufficient to offset the effects of all the stories set afloat by interested parties who have desired to discredit the Canadian West.

A despatch from St. Paul, Minn., says: The volume of traffic from the United States into Canada at present has astonished even those railway officials who had expected a revival of the "American invasion." The rush northward is out of all proportion to the elaborate plans made by the roads with branches into British territory to handle the spring rush. On the "Soo" line alone five special trains, loaded with American homeseekers and their household goods, and even stock, arrived for trans-shipment over that road into Canada. Part of this traffic will be moved via Winnipeg and the balance through Portal.

The Chicago Great Western has brought a ten-car train in from Iowa. The Burlington, two from Nebraska and one from Iowa, and the Rock Island one from Kansas and Oklahoma. The destinations of these families are said to be Northern Saskatchewan and Alberta. The Battleford and Prince Albert districts in Saskatchewan are largely favored, but "anything north of the line" seems to be the cry. A despatch from North Portal says: All trains arriving from the south are heavily loaded with settlers and landseekers; they are bound for all parts of Saskatchewan and Alberta, and are a good class of settlers. A number of steam plowing outfits are coming in daily.

Plans are being prepared for the erection of a grand stand on the Plains of Abraham, Quebec, for the pageant production. The stand will be built to seat between 15,000 and 20,000 people.

Largest Single Office Building in the World.

The largest single office building in the world is to be the City Investment Company's Building at Broadway and Cortlandt streets, New York. It is now in course of construction. The architect is Francis H. Kimball. The Cement and Engineering News of Chicago says of it that its claim to distinction is that it eclipses all others in the matter of cubic capacity and floor space. These figure up to 10,300,000 cubic feet and 500,000 square feet respectively. The Hudson terminal buildings will have a greater combined capacity; but as these twin structures are entirely separate from roof to street level, it is hardly fair to compare them with the City Investment Company's building. In the matter of height the latter surpasses every other structure in this city, with the exception of the tower of the Metropolitan Life Insurance building and the Singer tower. Measuring from the sidewalk level at the centre of Cortlandt street to the extreme top of the building, it will be 480 feet. The height above Broadway is slightly less, while that above Trinity place is somewhat greater, owing to the difference in level of these two streets. The building occupies a frontage of 105 1-2 feet on Trinity place, and extends through to Broadway, where its frontage is but 37 1-2 feet.

A feature of the City Investment Company's building, which above all others impresses itself upon the observer, is the fact that a deep recess or court is formed in the structure on the Cortlandt street side. The building is thus divided into four distinct portions. The central building rises above the rest of the structure, consisting of 33 stories, all told, while the two pavilions and the Broadway wing are but twenty-six stories high, or about 370 feet above street level. The object of having a light court on the street side of the building rather than on the inner side of the block is that it provides more light for the same area, and hence provides a larger number of light "outside" offices in the central part of the building.

The walls of the building are of Indiana limestone up to the sixth floor, and above this of special brick with terra cotta trimming and copper cornices. A feature of the building is the arcade, which runs from Broadway clear through the building to Trinity place. The arcade is formed with arched portals at each end, and occupies the entire width of the Broadway frontage. The height of the arcade is about 40 feet. It is finished in veined satuary marble with breche violette columns. The ceiling is barred, vaulted and domed and elaborately frescoed.

Twenty-three elevators will handle the transportation of passengers. Twenty-one of them are arranged in three banks which open on the arcade, and run to the seventeenth, tenth and twenty-sixth stories respectively. They are of the plunger type, and the excavations for the plungers of the elevators, which will travel to the twenty-sixth story are probably the deepest bores ever made for this purpose. Above the twenty-sixth floor there are two electric elevators, which will carry passengers to the top or thirty-third floor level.

The building is carried on concrete pile foundations sunk to rock 80 feet below the street level. Unusually large foundation girders were required, one of which is a triple-web 90-ton girder 9 feet high, 37 feet long and 5 feet wide. The basement and the sub-basement, which extends 30 feet below the curb level, will have an area of 32,000 feet. It is estimated that the building will weight about 86,000 tons, and the steel structure about 12,000 tons.

How Prince Rupert will be Planned.

"We are going to lay out the site of Prince Rupert so that it will become the most model, most sanitary, and yet the most artistically planned city on the continent." This is the statement made recently by Messrs. Franklin Brett and George D. Hall, landscape gardeners, of Boston, who have just returned to the east after making a survey of the site of the city which is to be built at the Pacific coast terminus of the Grand Trunk Pacific Railway. Messrs. Brett and Hall, it will be remembered, were recently awarded the contract by the G. T. P. for the laying out of the model townsite, and it is said they are to be paid for the work a sum in the neighborhood of \$40,000.

The streets of Prince Rupert will be broad and airy, and diagonal or "cut" streets will be unknown. The blocks will be numbered in such a manner that a perfect stranger in the city will not have any difficulty in locating an address when once he has been given an idea of the plan.

It appears, according to the statements of railway officials, that only about one-third of Kaien Island will be available for the city, because, like Montreal, it has a mountain rising in the centre to the height of 2,300 feet—something like three times the height of Mount Royal. The railroad is to cross the mainland to Porpoise Island and then to Kaien Island by means of bridges, the first of which will be about a quarter of a mile in length, and the second some 200 feet long. The plan most favored is to have the shipping and wholesale business on the first level, which rises to 75 or 100 feet above the water; the retail business and the public buildings on the second level, which is some 200 feet high, and forms a sort of ridge; and the residences still further back on a third level, which rises about another 100 feet.

There are to be several large parks. There is an excellent site for one on a central elevation, another at Point Hays, named in honor of the president of the G. T. P., and a third at the southwestern end of the city. Digby Island, just west of Kaien Island, will be developed for residences.

The site lends itself to the laying out of a beautiful city. The series of plateaus on which the town will be built extends for a distance of about a mile back from the water. Behind this rises the mountain—Mount Morse—from which a beautiful view is obtained of the glorious waterways which lead to the harbor, stretching away in delightful vistas. Opposite Kaien Island to the west, forming an effectual breakwater for the harbor, lies Digby Island, occupied by the Indian reserve of the Tsimpshean Indians. To the east is a beautiful lake, Shawatlans, meaning fresh water, which will supply the purest drinking water to the new city. At the foot of the lake is a fall of about 50 feet head, with great power possibilities, and it is from the development of this power that the city will obtain its electricity for lighting, street car, manufacturing and other purposes.

Toronto Building Increases.

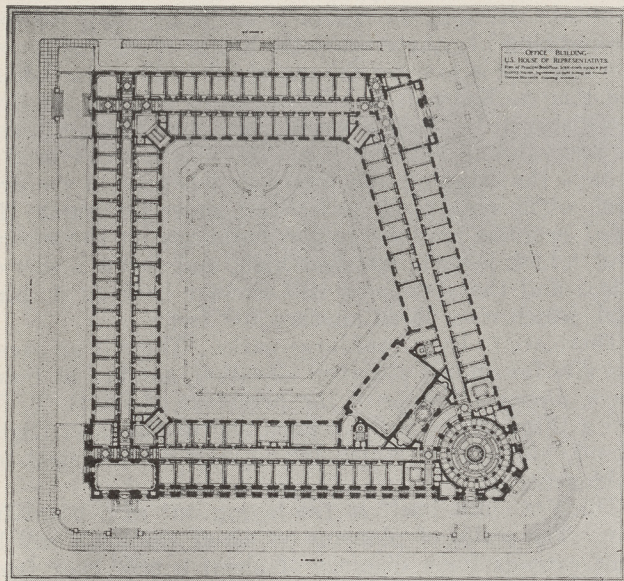
Toronto building permits for last week previous to the holiday showed a rapidly increasing scale in the values of buildings proposed. The total value for the first four days of the week is \$188,090, and the permits taken out on Thursday are not far short of half the total amount in value. Following are the figures: Monday, \$30,250; Tuesday, \$42,950; Wednesday, \$37,115; Thursday, \$77,775. The permits taken out are almost entirely for dwellings of the medium class.

The New Office Buildings at Washinton.

Some idea of the class of work that is being done by the United States Government may be gained from the drawings by Messrs. Carrere & Hastings, of New York, of whom Mr. Eustace G. Bird of Toronto is an associate, for the office buildings for the United States Senate and for the House of Representatives. Reproductions of the details of some of the plans are given in this issue and will prove of more than passing interest.

These buildings occupy blocks immediately to the east of the Capitol in corresponding situations to the right and left. They will have a common base upon one street. The side of the buildings will face upon streets radiating from the Capitol, but the view between the two will be intercepted by a third radiating street. One of the buildings will provide offices for every member of the House of Representatives with all the extra necessary appurtenances, such as caucus rooms and committee rooms. The Senators will be given an office and a private office each.

The buildings are entirely of white marble on the street front and in the court yards are finished in Indiana lime stone. The main entrances are located on



Floor Plan, U.S. House of Representatives Office Building.

the corners of each building nearest to the Capitol and while the exteriors are treated in fac simile the interiors are given individual treatment throughout. In order to obtain the necessary accommodation for the greater number of offices in the House of Representatives building, it has been planned in the form of a closed quadrangle. The Senate Building has its court open upon one side. The disposition and scheme of the plans is identical, with only such changes as are required for the slightly variant purposes of the buildings. Our illustrations represent a typical floor plan of each building and details of the bays in the courts. They are necessarily only partial. In a future issue we hope to present more complete details and views giving an idea of the whole scheme of the buildings and their relation to the Capitol.

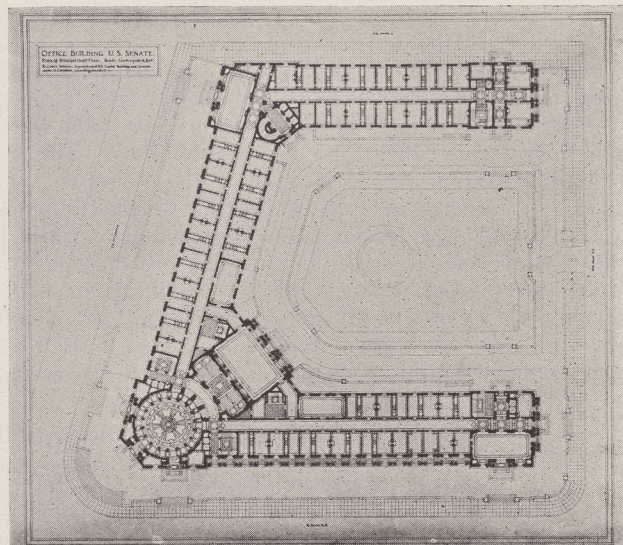
Mr. A. B. Rice, chairman of the Public Library Board of West Toronto, has received a letter from Mr. James Bertram, private secretary to Mr. Andrew Carnegie, stating that Mr. Carnegie will be glad to give \$20,000 towards the erection of a public library.

Building Activity at Calgary.

Calgary is starting in early with its building operations this year. The winter has been one of almost phenomenal mildness—even for sunny Alberta—while the previous one was a record winter for severity. If shivering Easterners wish to know what winter is like in Alberta let them reflect upon the pleasures there this winter, of cricket and tennis until Christmas and golf throughout the winter. A Montreal Star correspondent, dealing with western conditions says:

As for building operations, they have continued without the slightest interference from the weather. Work has been carried on continuously upon all sorts of buildings. Six of the finest structures in Calgary, aggregating a million dollars in value, were started last fall or late in the summer, and are now either almost completed or well under way. They include the magnificent new Canadian Pacific Railway station, the Provincial Normal school, the new City Hall, a new high school, new Court House and new land titles office.

Besides scores of private residences, this winter's building list includes Cushing Brothers' new planing factory, the largest in Canada; a \$75,000 apartment



Floor Plan, U.S. Senate Building.

building, Lineham's four-story business block on Stephen avenue, palatial new office buildings for the Calgary Brewery, and the Standard Soap Company; and the Calgary Milling Company's thousand barrel flour mill, which is the largest west of Winnipeg, and one of the most modern in Canada, being specially designed for milling the hard winter wheat which has helped to make Southern Alberta famous. Two fine steel bridges on cement piers have just been finished across the Bow river; one by the Provincial Government at a cost of \$50,000, and the other by the civic authorities at a cost of 25,000. The latter connects the city with a chain of beautiful island parks on the Bow, which are expected to become very popular summer resorts.

The city is about to erect a civic hospital, which will cost \$100,000, and which the ratepayers have already sanctioned. About a year ago the well-known British shipbuilder, Sir John Langham and his partner, Mr. William Gladstone, son of the "Grand Old Man," visited Calgary and were so strongly impressed with the business and architectural solidity of the city that they bought property in the rapidly developing wholesale section and erected last summer a \$50,000 warehouse, which

was rented in advance at a figure which yields eight per cent. on the investment. Sir John Langham is now letting a contract for another four-story warehouse to cost \$40,000, and which it is understood has been leased by the Canadian Fairbanks Company. Sir John will erect a third building of the same class during the summer.

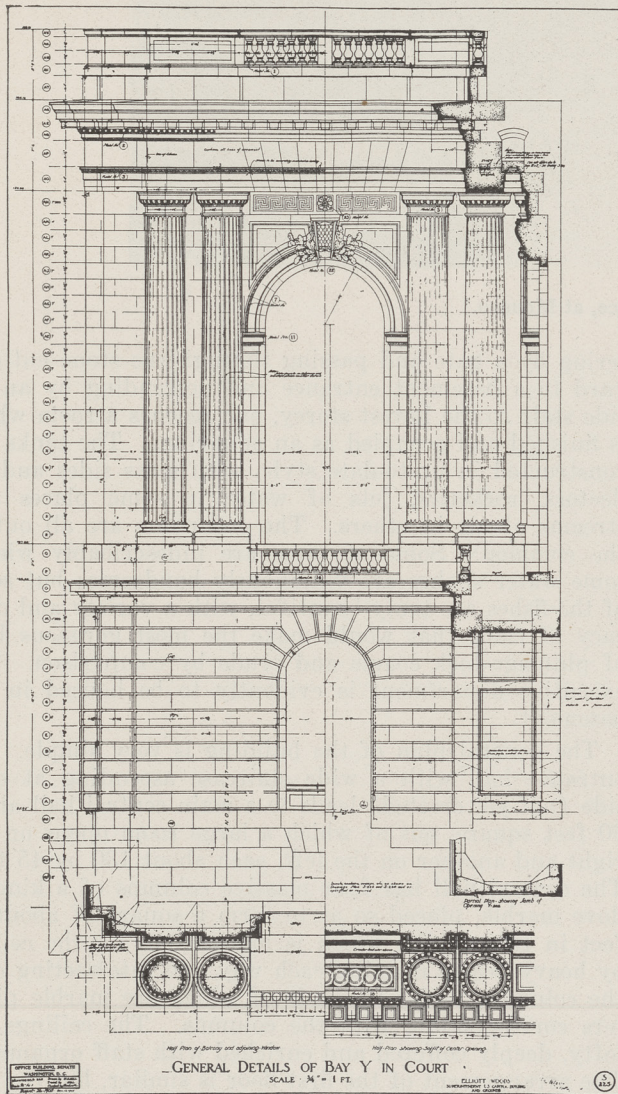
The City Council has received a definite offer of a Carnegie library and has already provided for its permanent maintenance by levying a special rate of half a mill on the total assessment of the city. It is likely the library will be built this summer.

Altogether Calgary will be a busy city for builders and mechanics this year, as it has been for the last four

second tunnel connecting their stables with the factory facing on James street, the City Engineer states that the material for this extension is on hand, with the exception of the valves and hydrants, which would have to be purchased at a cost of \$900. This work, he says, would protect to a certain extent the City Hall, and prove a very great protection to all the large buildings in the vicinity, particularly the Salvation Army headquarters, as well as the main building and factories of the T. Eaton Company, employing, I am informed, from 2,500 to 3,000 people. The estimated cost of this work would be \$7,000.

Toronto Station Hearing Next Month.

The Dominion Railway Commission will hold a sitting in Toronto early in May to consider the viaduct and Un-

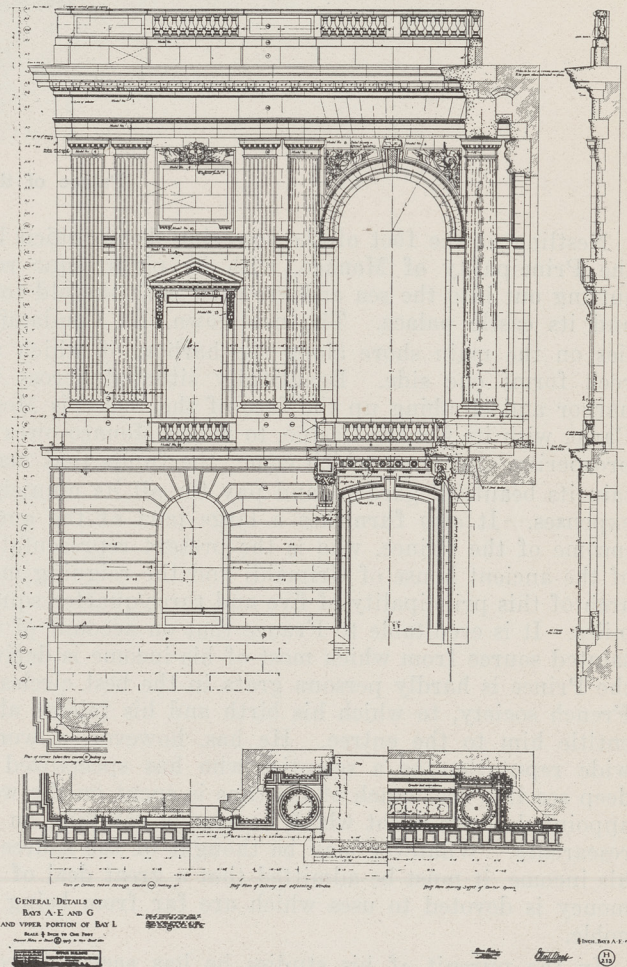


Details of Bay in Court; Office Building, U.S. House of Representatives.

of five, during which period its population has been quadrupled, being now well over 22,000.

Extending Toronto's High Pressure.

In reporting to the Toronto Board of Works on the plan submitted by Ald. McBride for an extension of the high pressure fire service from Queen street north to Albert street, on Teraulay street, and east along Albert street to a point west of the T. Eaton Company's tunnel crossing Albert street, together with a branch extending south a short distance on James street and north to a

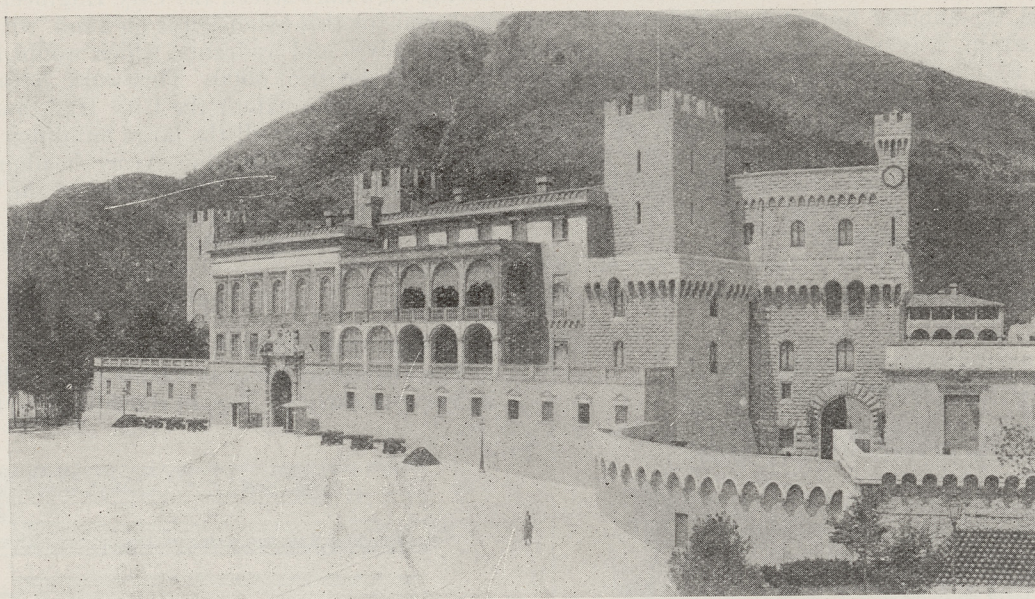


Details of Bay in Court; Office Building, U.S. Senate.

ion Station question. The railway companies have applied to the board for a further extension of time to complete the station. According to the present order the station must be completed before June 1 next, but as this is now impossible an extension of time will be granted. The board is anxious to have some settlement between the city and railways reached this spring, so that a start may be made on the station this summer. Letters have been sent to all the parties concerned urging them to submit definitely their plans and stipulations. The board will then be in a position to issue a final order for the work to proceed without further delay.

ARCHITECTURAL MONACO

By D. B. Dick.



Palace of the Prince, at Monaco.

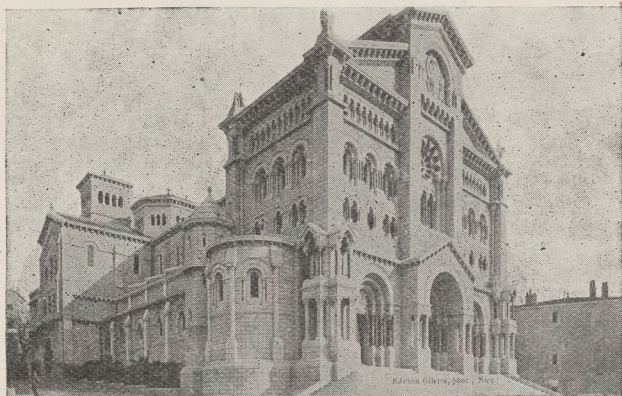
Nestling at the foot of the towering Tet-de-chien lies the Principality of Monaco, with its picturesque rock jutting out into the sea and crowned with the old town and its castle palace. The new town, La Condamine, lies on the main shore along the harbor, of which the rock forms one side. Beautifully situated across the harbor and climbing up the face of the rocks, is Monte Carlo, with its famous Casino, to which Monaco owes its prosperity, and from which come the funds that maintain its beautiful gardens and pay for all its municipal expenses. It also furnishes a large part of the ample income of the Prince, who is the present representative of the ancient house of Grimaldi and the reigning monarch of this principality of five and three-quarter square miles. It is creditable to France that on account of the tainted source from which most of his income is derived the Prince is hardly persona grata in the best circles of French society, to which his birth and his talents alike entitle him to the entree. He has, however, a world-wide reputation as a scientist who has specialized in deep sea life, and much of his time is spent on the well-appointed steam yacht which he uses in carrying on his researches. Whatever may be thought of the source of his income, it must be admitted that a great deal of the money is devoted to uses which are far from being ignoble.

In the pursuit of his studies he has accumulated a vast number of scientific treasures, alive and dead. The collection having far outgrown the capacity of the existing museum, the Prince conceived the idea of erecting at his own expense a splendid new building which would be at once a suitable home for his collection and an ornament to the town. This building is now approaching completion—in a leisurely fashion. A year ago it looked as if a year at the utmost would have been sufficient for its completion, but it looks now as if another year at least may have passed before it is entirely completed. The cut stone work is not yet finished, although the plastering is very nearly so. Soom rooms, however, are in use. The site being—as is not unusual in the Riviera—cut out of the solid rock, there are on the side next the sea two storeys below the main floor, which is but a few steps above the level of the street on the land side. En-

tering by a gate and passing through the stone cutters' yard to a basement entrance and descending by an inside stair to the lowest storey, one reaches a room which is finished and occupied as an aquarium. The tanks are constructed in up-to-date style, with glass sides and reflectors, rockeries, jets of water in some places and streams of air in others. The occupants are all out of the common. Some of them are indescribably wierd; some water snakes are villianously handsome; but some of the fishes are truly beautiful, with a variety and delicacy of color that would make the most gorgeous bird of plumage look coarse and crude by comparison. The executive department is evidently to be housed in the basement.

The general plan of the building is very simple. An entrance hall with a wide staircase ascending at each side (not yet erected) leads to a main central hall about 60 feet square, out of which a large room opens on the right and another on the left, each about 130 by 45 feet. The central hall has four massive columns of a kind of dove marble, placed so as to form a square of about 30 feet in the middle, which is marked out on the ceiling by heavy beams running each way and intersecting over the columns, under the ends of which are marble pilasters corresponding with the columns. The ceilings are lofty, deeply coffered and enriched with staff ornaments. The arrangement of the first floor is similar, but the two large rooms are to have galleries on the sides and the far end and have, therefore, two rows of windows, smaller ones below the galleries and larger above.

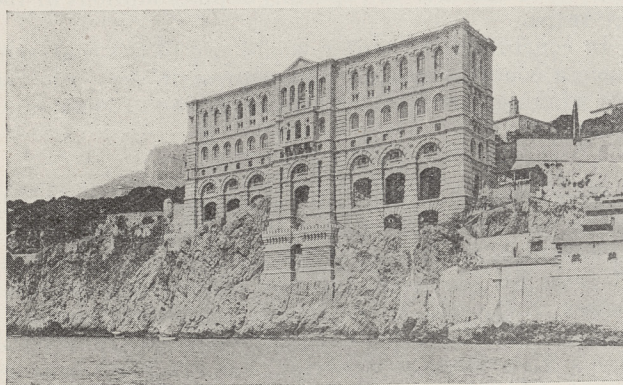
The construction is of the most substantial character, with thick walls, apparently of dimension stone, and floors of steel beams, hollow brick arches and concrete. It seems a pity that the furring down of the ceilings should be done in wood. Floors are of tile or wood blocks on concrete. The exterior is of a light buff limestone and is well designed. The principal front is that towards the town, and is somewhat monumental in character, with Corinthian columns embracing the two principal storeys. The main entrance projects bodily in the middle. While adhering generally to classical traditions, the details wherever possible have been given a character expressive of the purpose of the building. Thus



Cathedral, Monaco

the rustic courses, which alternate with plain ones in the ashlar, are made rather cleverly to represent breaking waves, while oceanic forms, such as fish and seaweed, prows of galleys and other nautical emblems, are introduced wherever possible. Neptune appears in a symbolic group on one side of the entrance, and Mercury on the other. The front towards the sea is very properly simpler in design, because a full view of it can only be had from a boat. It might have been kept simpler and bolder still with advantage. For instance, the foundation of the central part has to go down much lower than the rest on account of the shape of the rock, and is treated as a pair of huge pedestals with enriched caps, while simple bold buttresses in keeping with the rugged character of the rock would have been vastly more appropriate and effective. A balcony has been thrown out from the window of the central hall facing the sea, from which there is a magnificent view of the Mediterranean and the coast on either hand, showing promontory after promontory until they lose themselves in the haze of distance.

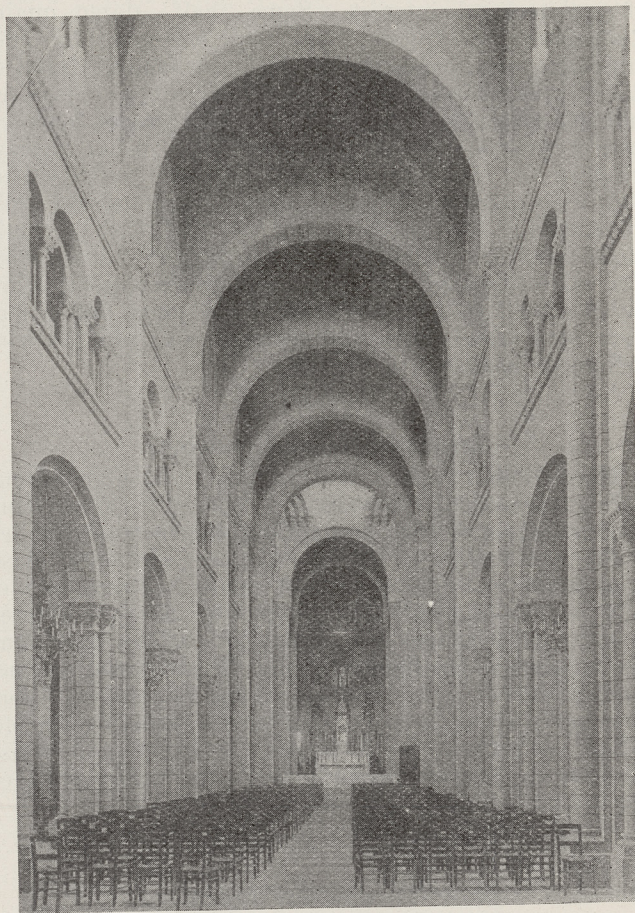
Standing higher up on the top of the rock, and dominating the town at the seaward end as the palace does at the landward end, is the cathedral, also built at the expense of the Prince by the Architect Charles Lenormand. It has been completed some ten years, but in this clear and smokeless air it still looks quite new. It is fully 250 feet long and 100 wide, and is very complete in its arrangements, having a gable with an apse at each end, nave and two aisles, triforium and clear storey transepts with aisles and cupola with pendentives over the crossing. There is a wall chapel in each bay of the aisles, with either an altar or a confessional in each. The sanctuary has a circumambulatory with five radiating apses, and at each side chapels, sacristy, etc. The style



Oceanographic Museum, Monaco.

is Norman with a Byzantine feeling in some of the details and Lombardie in others. The gable is carried up half as high again as the nave and forms a huge mass that dwarfs the rest of the building into insignificance, and for no apparent reason, for the part above the clear-story is windowless. It has the effect of the stage end of a theatre, only it is at the front instead of at back. The whole building is of stone, inside as well as outside, with the exception of the vaulting, which is done in plaster in imitation of stone, and very badly managed, the longitudinal effect being entirely destroyed by lifting the portion over each bay into a sort of shapeless oblong dome. The confessionals, however, have been designed in harmony with their surroundings, which is somewhat unusual, since in most continental churches they are merely cheap wooden boxes, quite destitute of architectural character.

One cannot but regret that in this church a great opportunity has been missed. There is a total want of cohesion about it. It impresses one, not as a composition,



Cathedral Interior, Monaco.

but as an aggregation of separate parts and details, each standing out by itself without being in any way subordinated to the general effect. Expense has not been spared, and there are marble shafts and carving in abundance, but the whole thing is cold, dead and uninteresting. Perhaps the best feature is the high altar, which is of white marble with some mosaic and has been kept of moderate size and in good taste. There is in Nice a large church in Italian Gothic by the same architect which has the same faults as this one and is equally disappointing.

The palace is mostly Renaissance with some recent

castellated additions intended to be in harmony with what remains of medieval work at the end of the rock facing shorewards. There is little about it of architectural interest unless a white marble outside staircase and loggia with classical frescoes in the quadrangle. As a palace it is but a pigmy compared with those of the European capitals generally, but there is a handsome suite of reception rooms richly furnished.

The defensive equipment of the principality consists of an army of 75 men and some half dozen ornamental bronze guns of the 16th century, which stand on the esplanade in front of the palace with the usual pyramids of balls beside them. The palace garden is small but beautifully laid out with beds of brilliant flowers, clumps of bamboos, orange, mimosa, pepper, palm and other sub-tropical trees in great luxuriance. It is fenced by a low stone wall, built on the very edge of the perpendicular rock, which has a sheer drop to the sea of about 200 feet.

For a place with a history dating back some 2,000 years, the old town is singularly destitute of anything of architectural interest. Some half dozen quaint Renaissance doorpieces, obviously belonging to older buildings, are about all that is to be found. None of the present houses are very old. The walls are plastered and the openings perfectly plain. The streets, however, have a general air of picturesqueness, being narrow, winding and irregular, the buildings three to five stories high with green shuttered windows, balconies and archways making deep shadows, and here and there an earthquake arch or a bit of balustrade topping a low house. The chief charm is in the light and shade and the coloring in which yellows and siennas and pinks and greens have been toned down and softened and blended with delightful harmony.

Structural Glass Flooring.

The fact that each of the familiar and long-tried materials for covering the walls and floors of bathrooms and lavatories has at least one serious shortcoming has led to the introduction of a patent sanitary structural glass. It is milky white in color, and comes in thicknesses of half an inch, the slabs being otherwise almost unlimited in size. This insures ease of setting, and the least number of joints in the finished room. The material will not swell or shrink, craze or discolor, and is absolutely non-absorbent, which is more than can be said for marble. When used for floors it is given a thumb-nail polish (similar to statuary marble), while the highly polished variety is used for walls.—Indoors and Out.

New Theatre for Brantford.

Managar Johnson, who will erect a new theatre in Brantford, seating two thousand people, has applied to the City Council for a fixed assessment of \$5,000 for ten years. The request will be granted. The city is getting the right to the free use of the building four nights each year, and at a nominal rate of \$12 per night on other occasions, when the hall is required for civic purposes. The structure will be erected this summer.

At a special meeting of the Belleville City Council the tax rate for the year was struck at 27 mills on the dollar. The increase of taxation is owing to considerable expenditure, which amounts to several thousand dollars.

Concrete Construction.

Continued from page 15.

around the most convenient outside column of the floor just being erected. This hoist is taken from floor to floor as the work progresses, the cost of moving being very small. An ideal mixing plant was described in the "Canadian Contract Record" of October 31, 1906.

In addition to the mixer and hoist, the plant should consist of a power saw and grinding stone. A steel bar cutter and bending machine are also necessary when bars are to be bent on the work. A bolt threading and boring machine should be added on larger work.

On a concrete structure everybody and everything should work in a cycle. As much as possible, the same gang of carpenters should do the same part of the form work from start to finish, followed by another gang doing another part, etc. The laborers with the concrete barrows should not return by the runways on which they are bringing the concrete. It is economy to have two men doing nothing else but placing and moving runways while concreting is in progress.

SUPERINTENDENT'S RESPONSIBILITIES.

The most important man on the work is naturally the superintendent, more so on concrete construction, because on all other building material the neutral axis of a structural member is fixed before it reaches the job. It is the superintendent who really establishes the neutral axis on concrete work and not the designing engineer. I am well aware of the significance of this statement. It is not necessary for the construction superintendent to be a graduate of some university of technical school, but it is absolutely necessary that he be thoroughly familiar with the properties of the ingredients of concrete and with the reinforcement. In other words he should have a little theoretical knowledge combined with a great deal of practical experience. His knowledge of proportioning, mixing, placing concrete and reinforcement must be complete to avoid disastrous results, the loss of money and life. To test the strength of concrete by sound or by scratching the surface with a knife or nail takes years of practice.

Concrete properly handled is one of the greatest building materials. Its possibilities are unlimited. Some of the readers might not be aware of the fact that concrete barges and pontoons are built with success to-day. There are two conditions which will alone — in the writer's estimation—bring concrete ahead of the steel industry in a short time, the depletion of the forests and the heavy insurance tax. The latter is in America "two hundred millions a year more than in Europe on a per capita basis." The cause for this enormous difference will be found in the flimsy construction and it is safe to say that reinforced concrete will speedily replace millions of these fire traps.

In conclusion the writer would say to the contractor: place a concrete specialist on your staff, for "the game is a winning game" and allows no taking of chances.

Nova Scotia exchanges recently contained flattering mention of Leslie R. Fairn, architect, of Aylesford, N.S. Among the buildings recently constructed from his plans are the new \$50,000 high school at Sussex, N.B., said to be the safest and best planned in Canada, the fine modern Kings County jail, and St. Joseph's Glebe house at Kentville, N.S. His plans have been accepted for the new Presbyterian and Baptist churches at Sussex.



Old Cawthra Homestead, Toronto.

A Beautiful Toronto Landmark.

The old Cawthra homestead, familiarly known to Torontonians for many years as the Molson's Bank building, at the northeast corner of King and Bay streets, has been admired time and again, probably by every architect in the city, and by everyone who enjoys the sight of a fine building. Its present alterations to suit the purposes of the Sterling Bank have been watched anxiously for fear that its splendid appearance might be spoiled. Apparently only one important change is being made, the moving of the main entrance from Bay to King streets. This will add somewhat to the dignity of the building, but involves one slight alteration which detracts from its appearance. The pediment above the porch overlaps the pilasters on either side a trifle, whereas in its former position, as shown in the illustration, it fitted snugly between them. The long upright lines of the pilasters and the proportions of the pediment are somewhat detracted from by this. Aside from this it is a matter for congratulation that the building, one of the most exquisite examples of Corinthian classic to be found, is to retain its exterior appearance unaltered. The illustration shows the building in its early days as the residence of Mr. Wm. Cawthra, who erected it in 1852. Its transformation into a banking house about 1884 involved the disappearance of the four chimneys appearing in the illustration. The building is now owned by the Canada Life Assurance Company, and will be rented to the Sterling Bank.

At the annual meeting of the Regina Architectural Association the following officers were elected for the ensuing year: President, F. Chapman Clemesha; vice-president, E. M. Storey; secretary-treasurer, W. B. Van Egmond; committee, W. W. Hilton, Geo. E. Hutchinson, Walter J. Colman.

Architectural Composition.

A useful book for architects, which will be generally welcomed also, is entitled "Architectural Composition," by John Beverley Robinson, Member of the American Institute of Architects. The publishers are D. Van Nostrand Company, New York. The book is explained as "attempt to order and phrase ideas which hitherto have been only felt by the instinctive taste of designers. Some time ago Mr. Robinson published in the "Architectural Record" a series of articles upon the principles of architectural composition, which were afterward reprinted in book form. His motive was a conviction that it was possible to formulate the approved practice of architects in designing the exterior of buildings. The book was favorably received, and the present work developed the theories laid down in the former book, in a more coherent and logical form. The book is handsomely printed and is illustrated with a great number of cuts and half-tones, which add materially to its usefulness. It will prove invaluable to the student of architecture and attractive also to the casual reader.

Toronto Architects' Meeting.

The Toronto Chapter of the Ontario Association of Architects at their annual meeting selected the following officers: Chairman, Geo. W. Gouinlock; secretary, H. Sparling; treasurer, P. J. Wickson; auditor, H. B. Gordon. The meeting was one of the most successful held in the past two years. The application to the Legislature for an amendment to the present Act governing that body was discussed, and it was claimed that the aim was the improvement of architecture in the province. What the association wants is to have the examinations for architects governed in some way by the Legislature or the University.

Lieutenant-Governor Dunsmuir's New House.

The new country house being erected by Lieutenant-Governor Dunsmuir at Hatley Park, about 7 miles from Victoria, B.C., is to be a magnificent mansion in an estate of 232 acres, fronting on the east side of Esquimalt harbor, directly opposite the naval dock yard. The Vancouver Province contained an account recently of building, from which we take the following: It will cost, exclusive of furnishings, between \$250,000 and \$300,000. The land in front of the building has been cleared and the foundations have been laid. Mr. S. Maclure, the architect, has been given a free hand in designing the building. The grounds will be entered through a large stone and wrought iron gate, near which will be the gatekeeper's lodge, built in 15th century Gothic, to harmonize with the main building. The building will be 200 feet long and 86 feet wide, with a porte cochere 30 by 20 feet. From the basement rise foundations of concrete and rock-faced granite. The superstructure will comprise two stories and an attic surmounted by a large square central tower with a turret, rising to a height of 82 feet and capped by a flag staff. It will be built of random rubble, trimmed with Saturna Island sandstone of light grey color. The vestibule is 8 by 9 feet and from it one enters the main hall, 43 by 36 feet, off which at right angles extends east and west through the centre of the building a corridor 141 feet long and 12 feet wide. On either side of the hallway will be located spacious ladies' and gentlemen's cloak rooms. From it also lead a richly carved double flight of stairs, each six feet wide, extending to the gallery and upper hall. The woodwork of these halls and the upper and lower halls and corridors will consist of Canadian quartered oak, including massive timbered oaken roofs. From the gallery or half landing a circular staircase leads to the private apartments in the main tower. The hall on the ground floor will contain a carved stone fireplace, probably of Arizona red sandstone.

Mr. Maclure will direct the building operations this summer, in order to see that the contractors do not omit a detail. A year hence Mr. Dunsmuir will be occupying one of the most beautiful and comfortable homes in the Dominion.

The estate fronts on Esquimalt lagoon, in whose waters are reflected the lofty snow-capped mountains of the Olympian range in the State of Washington. From its slopes is presented a beautiful view of the Straits of San Juan de Fuca. From the sea shore there is a gentle rise for a distance of about a quarter of a mile, then the ground becomes level, alternating here and there with gentle undulations until the Collingwood plateau is reached. The estate presents a very diversified appearance. Stretches of primeval forest extend to the beach, or are varied with park-like copses of maples and open spaces. The entire estate will be enclosed by a wire fence and large wooded portions, already the favorite haunt of pheasants, will be utilized as a game preserve. Thus far about fifty acres have been cleared. The estate is reached from Victoria by way of Parson's Bridge and is on the main highway leading to Sooke. On the space already cleared will be located golf links.

The residence will be located on a gently rising slope about five hundred yards from the sea shore. It will command a glorious view of forest and mountains. Mr. Maclure is virtually self-taught and not being hampered by tradition has originated many new styles. He has executed several commissions for several wealthy Californians and many of his designs have been published

in English and American art journals. Mr. Maclure's finely chiselled features portray his artistic gifts. He is a native-born British Columbian, the son of an officer in the Royal Engineers, who accompanied Col. Moody to this coast in the early Crown colony days.

Toronto, Thirteenth in List.

Toronto's building returns for March show that activity, though falling off as compared with the same month last year, is quite marked, as compared with other cities on the continent of considerably greater population. On the other hand, several cities which lagged far behind have made a good jump and headed Toronto in the race for position. Out of 44 cities, returns from which are tabulated below, only 15 show increases. Toronto's percentage of loss is 44, and while there are a number of cities which show a less percentage, there are more which show a larger one. In view of the depression which has existed, and which is now beginning to pass away, Toronto has no great reason to be dissatisfied with her position of thirteenth. Following are the comparisons of the larger cities:

City.	1908. Cost.	1907. Cost.	P.C. Gn. Lss.
Chicago	\$4,829,300	\$5,906,400	.. 18
New York, inc. Man- hattan and the			
Bronx	2,699,900	9,922,535	.. 72
San Francisco .. .	2,676,909	8,203,880	.. 67
Brooklyn	2,082,190	5,801,283	.. 64
Philadelphia .. .	2,489,940	3,535,260	.. 29
St. Louis	1,964,490	2,959,659	.. 33
New Orleans	1,833,771	364,969	402 ..
Seattle, Wash. . . .	1,303,245	1,399,100	.. 6
Los Angeles	1,005,463	1,273,156	.. 21
Indianapolis	937,389	605,718	53 ..
Denver	901,850	668,640	34 ..
Portland	883,894	659,729	34 ..
Toronto	838,130	1,508,530	.. 44
Kansas City	819,620	728,150	12 ..
Milwaukee	710,565	697,223	2 ..
Cleveland	745,985	1,902,702	.. 60
Pittsburg	567,830	1,123,892	.. 40
Detroit	667,450	1,480,350	.. 55
Newark, N. J. . . .	499,757	616,399	.. 18
Spokane	587,880	440,840	33 ..
Allegheny	567,830	1,123,892	.. 49
Buffalo, N. Y. . . .	440,000	850,000	.. 48
Cincinnati	428,340	650,463	.. 35
Minneapolis	413,200	684,735	.. 39
Baltimore	409,356	351,394	16 ..
Louisville	406,167	363,857	11 ..
St. Paul	370,890	711,364	.. 46
Columbus	302,400	450,785	.. 32
Tacoma	290,191	389,720	.. 25
Atlanta, Ga.	284,737	560,876	.. 49
Omaha	221,620	344,720	.. 35
St. Joseph	177,973	81,145	119 ..
Lincoln	161,837	155,945	4 ..
Duluth	145,063	259,790	.. 44
San Antonio	142,390	137,175	4 ..
Paterson	137,908	107,040	28 ..
Terre Haute	135,620	83,345	62 ..
Toledo	131,490	376,325	.. 65
Birmingham	128,692	376,964	.. 65
Chattanooga	112,800	98,160	15 ..
Wilkesbarre	92,010	186,413	.. 50
Grand Rapids	90,765	169,605	.. 46
Worcester	59,885	185,876	.. 67

An Architect's Liabilities.

In a paper recently read by A. Montefiore Brice, of the Middle Temple, before the London Society of Architects, there was an elaborate statement of the liability of an architect to the person who employs him. In most respects the following observations of the essayist, are applicable to this country as well as England.

An architect is frequently called in merely to advise a person contemplating the erection or alteration of a building. When thus consulted he holds himself out as possessing the requisite knowledge and practical skill, and if his client should be injured by his failure to display these qualities he will be liable for any damages.

Ordinarily the architect is not merely an adviser, but also a designer. In this capacity he contracts to supply drawings and specifications capable of being carried out. His plans must not only comply with the requirements and instructions of his employer, but also with the various statutory and municipal regulations affecting such building as he has been called upon to design. He must observe all such restrictions, and also see to it that the building designed is not defective in structural strength. If asked to furnish estimates of the probable cost of the designs and plans he must not estimate the work at a price at which he would not contract for it.

In regard to estimates of the cost of building it is a general rule that whenever an architect, by want of skill or care, advises the owner that the cost will be very much lower than what the event proves it would be, the architect loses his right to recover fees, and may even make himself liable in damages. The disparity between the estimated and the actual cost must be substantial, although if the architect is engaged to furnish drawings and plans for a building not to exceed in any event a certain cost, he cannot recover any fee if the designs furnished by him are incapable of being executed for that sum.

Unless otherwise agreed, it is the duty of the architect to deliver up his drawings and specifications upon payment of his fees, and the architect cannot evade that duty by setting up a custom to the contrary; at least, not unless he can show that the owner knew of the custom and contracted with reference to it.

To the architect's function as adviser and designer may be, and usually are, superadded the duties of overseeing and superintending the construction of the building in accordance with the plans. Upon accepting that duty the architect becomes the agent of the owner of the building and liable as such. He is bound, in the first place, to observe all legal limitations upon the use of the proposed site. He must not suffer the building to be so erected as to impair the rights of adjoining owners or infringe the general or local regulations. Ignorance or neglect of these precautions may subject his client to a fine or to the demolition of the building. If the architect disregarded a building line, the owner, when compelled to set his building back, could ordinarily hold him liable for the cost of so doing. In like manner the architect would be responsible for any damage incurred by the owner because of the building being so constructed as to interfere with party walls or other rights or easements of the owners of adjoining property. So, too, if an architect negligently placed a building partly on another man's lot he would be answerable to his employer for the consequences.

An architect is bound to take cognizance not only of the legal restrictions upon the use of the premises, but of the natural condition of the site and soil. It was

held in a famous English case that if the foundations of a building prove to be bad, the architect who has failed to make a proper examination of the nature of the soil cannot recover his fees. It follows that he would also be liable in an action for damages.

Victoria's New Fair Building.

The result of the award in the public competition for the architects' plans and specifications for the new main building to be constructed by the Victoria Agricultural Association has been made public by Secretary J. E. Smart. The plans and specifications will be a credit to the management and to the city.

The winner of the first prize of \$300 was David Frame of F. M. Rattenbury's office, while the winner of the second prize of \$100 was the firm of Hooper and Watkins. There were five architects who competed for the prizes and only the plans of the first winner were accepted by the directors and these will be subject to slight alterations. The contest has been in progress since the first of March and the contestants have been working assiduously on the specifications since that time.

The building is to be of circular construction, and will be situated on the west side of the main entrance of the grounds. The entrance to the building will face the east. The structure will be 200 feet long, 90 feet wide and 45 feet high, and will have a floor space of 20,000 feet unobstructed by a single post. It will have a large wing on either side and four exits. The main entrance will be underneath a tower rising some 70 feet in height. The outside of the building will be shingled and the dome portion will be covered by Mansard roofing. Two rows of twenty skylights will be located on either side of the centre of the roof.

The exhibition management will have offices in a gallery over one of the wings, while in the other wing an up-to-date grand stand will be constructed.

Liabilities of Building Contractors.

A case of interest to architects and contractors was heard before Magistrate Love at London, Ont. recently, when Mr. J. B. Smallman and Contractor E. Martyn appeared in court charged with breaking the bylaw, which states that proper measures shall be taken for the protection of workmen.

City Engineer Graydon, who laid the information, claimed that as there was no flooring as yet in the new Smallman & Ingram building, the workmen on the ground floors were in danger of being struck by falling tools, materials, etc., from the upper stories; while workmen on the upper parts of the building might fall a long way and sustain serious injuries.

Mr. J. B. Smallman stated to the court that he did not think he was to blame as the bylaw had not been passed until three months after he had let the contracts for the work. It seemed to him that it was the contractor's place to look out for that part of it.

One of the contractors, Mr. Martyn said he undertook to do the brick work, and had nothing to do with putting in the floors. A New York firm has the contract for putting in the cement floors.

An effort will be made to have the New York firm's representatives give evidence, and in the meantime the magistrate has ordered that all the work below the fourth floor be stopped. A temporary floor will be put in above that, and work will shortly be gone on with there.

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Building Materials Used in Toronto.

In a statement prepared by City Architect McCallum, of Toronto, a classification of all buildings erected last year is given. The statement shows that the total value of brick dwellings greatly exceeds any other kind of structures erected. Following is the report:

Permits.	Buildings.	Value.
1,052	Brick dwellings	\$5,900,570
148	Brick dwellings, Alt. & Add.....	158,625
411	Rougheast dwellings	383,645
381	Rougheast dwellings, Alt. & Add ...	99,644
732	Rougheast dwellings, brick fronts..	1,039,715
119	Frame dwellings	117,840
12	Frame dwellings Alt. & Add.....	5,680
79	Brick veneer dwellings	128,780
237	Stores and Offices	1,283,780
164	Stores and Offices Alt. & Add.	331,936
9	Banks	349,450
4	Banks, Alt. & Add	18,000
4	Hotels	68,000
10	Hotels, Alt. & Add.	49,900
8	Churches	95,300
8	Churches, Alt. & Add.	76,100
52	Workshops	159,260
5	Workshops, Alt & Add.	4,000
35	Factories	953,600
24	Workshops, Alt. & Add	82,650
1	Foundry	160,000
21	Storehouses	36,450
2	Storehouses, Alt & Add.....	270
40	Warehouses	740,200
2	Warehouses, Alt. & Add	95,300
235	Verandahs	44,875

73	Sheds.....	19,850
150	Stables.....	78,310
18	Stables, Alt. & Add	5,565
1	Public Library	250,000
5	Theatres.....	428,000
1	Theatre, Alt & Add.....	700
3	Kilns.....	2,800
6	Chimneys & Smokestacks.....	23,885
6	Buildings, Exhibition Park.....	383,065
34	Garages.....	54,610
2	Fire Escapes.....	4,025
10	Buildings, Scarboro Beach Park....	77,000
7	Laundries	22,400

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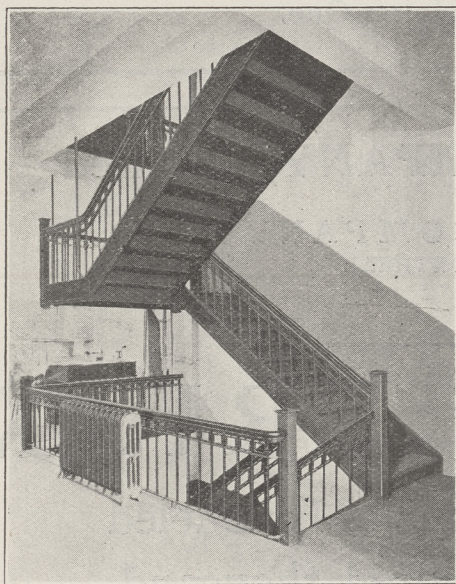
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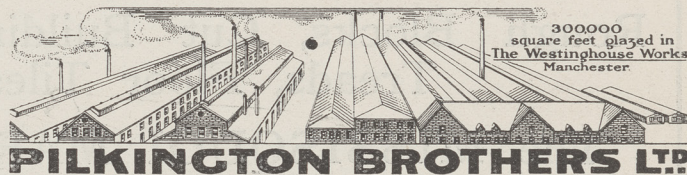
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7	Greenhouses.....	8,175	5,051.		\$14,325,800
7	Greenhouses	8,175			
2	Sunday Schools	20,900			
6	Boiler Houses	65,800			
2	Rinks.....	10,700			
5	Schools.....	82,000			
12	Schools, Alt. & Add.....	177,400			
1	Police Station.....	25,000			
1	Y.W.C.A. Alt. & Add.....	12,000			

The Toronto Board of Control has decided to confer with City Engineer Rust and City Solicitor Chisholm, in regard to the liability the city will assume in connection with the viaduct. The Commission has intimated that it will visit Chicago to see the viaduct there, and the Board will send the Mayor to accompany them.

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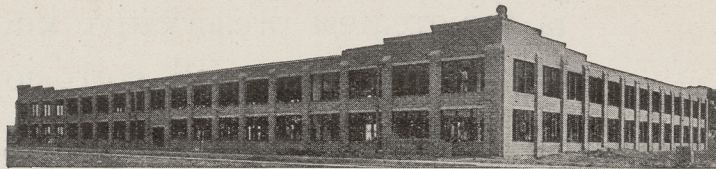
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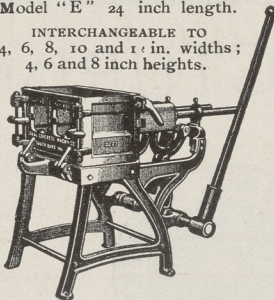
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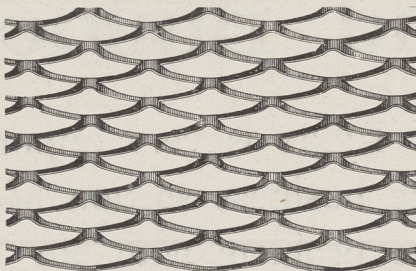
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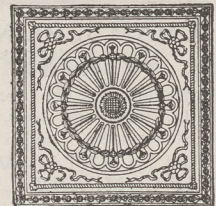
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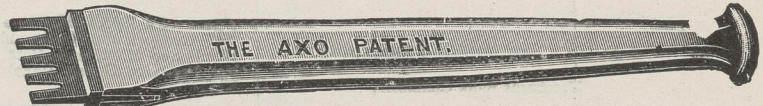
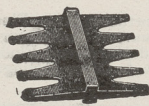
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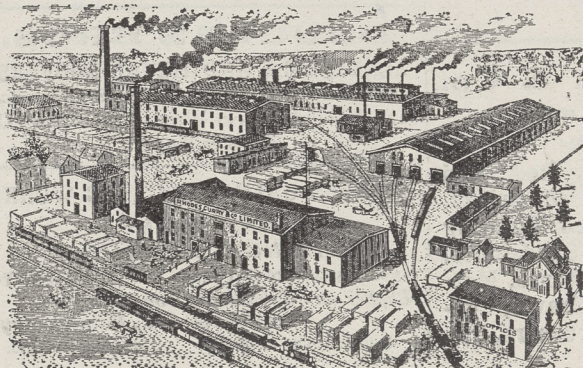
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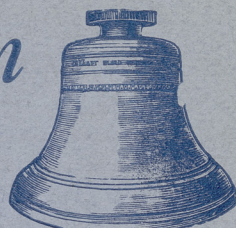


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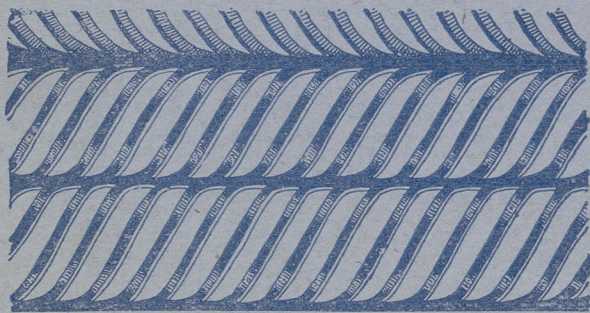
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